

**Department of Agricultural Systems Technology & Education
College of Agriculture
Utah State University**

Course Title: Science, Technology, and Modern Society
Course Number: ASTE/ETE 3440 (DSC)
Semester Credits: 3
Instructor: Ms. Denise Stewardson
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Date: Spring 2009
Course Time: T R 10:30 - 11:45 a.m., ENGR 203
Office Hours: T R 9:00 a.m. – 5:00 p.m.; others by appointment

Course Description

The course Science, Technology and Modern Society challenges students from all academic majors to develop an understanding of the dynamic interaction between science, technology, and society; and the responsibility of humans in directing the utilization of technology as a creative enterprise. Students will critically investigate contemporary technological innovations, issues, and impacts on society from a global perspective.

Course Goals

1. Develop an understanding of technology's impact on cultural values and global mindsets.
2. Discover the influence of scientific thought on other disciplines.
3. Develop an understanding of the influence of technology on history.
4. Comprehend the core concepts of science and technology in contemporary society.
5. Acquire technological forecasting and risk assessment skills toward the enhancement of quality of life on our planet.
6. Synthesize an interdisciplinary awareness of the need for technological literacy in order to effectively recognize and take advantage of the potential benefits of a technological breakthrough and simultaneously control its negative side effects and/or risks.
7. Gain experience in researching technological concepts and writing a paper using an appropriate format and style.

Course Topics

Introduction

Nature of Science and Technology
Definitions/Vocabulary
Historical Perspective
Social Impacts

Innovations

Biotechnology

The Critical Technologies
Biotechnology and Agriculture
Industrial Uses of Biotechnology
Biotechnology for Health
Cloning
Regulatory Considerations

Information Technologies

Technologies to Sustain an Information-Driven Culture
Telecommuting to Work—Virtual Transportation
Videoconferencing and Teleconferencing
Electronic Privacy

Space Exploration

The Conquest of Outer Space
Space Technology of the Present
Future Developments in Space Exploration
Bioastronautics

Breakthroughs in Medicine

A Profile of Health Care in the United States
Contemporary Technology in Medicine
Quality of Life Ethics

Issues

Appropriate Technology

What is Appropriate Technology?
International Sustainability Efforts
Technology Equity

Environmental Issues

The Contemporary Environmentalist Profile
Key Issues on a Global Scale
Air Quality Standards
Tropical Forest Resource Depletion
Water Management
Hazardous Waste Management

Perspectives

Social Response to Technological Change: Breakthroughs and Risks

- The General Nature of Change
- Social Attitudes toward Changing Technology
- Technology Traps
- Living with Technology = Making Tradeoffs

The Stability of Traditional Social Institutions

- The Family: Technology & Personal Relationships
- The Church: Technology & Religion
- The School: Technology & Education
- The Playground: Technology & Recreation

The Technologist's Responsibility for the Future of Society

- Technology Research: On the Leading Edge
- Technology Management
- Technology Risk Assessment
- Forecasting for a Responsible Future

Course Resources for Students

All course materials posted on VISTA Blackboard for ASTE/ETE 3440 (required)

American Psychological Association. (2001). *Publication manual of the American*

Psychological Association (5th ed.). Washington, DC: Author. (not required; available at the bookstore and the library reference desk)

Course Requirements

1. Complete reading and homework assignments.
 2. Thoughtfully participate in class discussions.
 3. Lead a discussion group on a technological topic and report the results.
 4. Complete three brief technical research projects.
 5. Take three exams.
- Please turn off all cell phone ringers and text messaging during class time. No electronic devices are allowed on exam days (iPods, MP3 players, etc.).
 - Remember that each student must complete his or her own work.
 - Course notes are not posted. If you need notes from a particular class, find a classmate who is willing to share notes.
 - Late work is not accepted without an excused absence.

Evaluation

The following requirements are used in calculating the final course grade and each will be weighted as indicated:

Exams	40%
(5 points are deducted for unreadable Scantrons, e.g. ink, torn paper.)	
Technical Research Projects	35%
Homework, classroom participation, and discussion group reports	25%

Scores in each category listed above will be totaled and weighted appropriately. Final letter grades are based on a normal distribution.

90% & above	A
80% to 89%	B
70% to 79%	C
60% to 69%	D
59% & below	F

NOTE: Plus and minus letter grades will be assigned to the upper and lower two scores in each of the ranges listed above (e.g., a score of 88 or 89 will receive the letter grade of B+ and a score of 80 or 81 will receive the letter grade of B-).

Assignment grades are tentative until those grades are posted. Grades for each assignment are posted on VISTA Blackboard. Course grades are entered electronically and are instantly recorded on the student's transcript.

Reasonable Accommodation Statement

Students with ADA-documented physical, sensory, emotional or medical impairments may be eligible for reasonable accommodations. Veterans may also be eligible for services. All accommodations are coordinated through the Disability Resource Center (DRC) in Room 101 of the University Inn, (435)797-2444 voice, (435)797-0740 TTY, (435)797-2444 VP, or toll free at 1-800-259-2966. Please contact the DRC as early in the semester as possible. Alternate format materials (Braille, large print or digital) are available with advance notice.

Bibliography for ASTE/ETE 3440**Books**

- Altieri, M. A. (2004). *Genetic engineering in agriculture: The myths, environmental risks, and alternatives*. Oakland, CA: Food First Books.
- Brende, E. (2004). *Better off: Flipping the switch on technology*. New York: HarperCollins Publishers.
- Friedman, T. L. (2006). *The world is flat: A brief history of the twenty-first century*. New York: Farrar, Straus and Giroux.
- Hjorth, L. S., Eichler, B. A., Khan, A. S., & Morello, J. A. (2003). *Technology and society: A bridge to the twenty-first century*.
- International Technology Education Association. (2000). *Standards for technological literacy: Content for the study of technology*. Reston, VA: Author.
- Markert, L. R. & Backer, P. R. (2003). *Contemporary technology: Innovations, issues, and perspectives* (4th ed.). Tinley Park, IL: Goodheart-Willcox.
- Ritzer, G. (2004). *The McDonaldization of society*. Thousand Oaks, CA: Sage Publications.
- Schneiderman, R. (2003). *Technology lost: Hype and reality in the digital age*. Upper Saddle River, NJ: Prentice Hall.
- Scott, C. T. (2005). *Stem cell now: From the experiment that shook the world to the new politics of life*. St. Paul, MN: Pi Press.
- Slesnick, I. (2004). *Clones, cats, and chemicals*. Arlington, VA: National Science Teachers Association.
- Smith, D. J. (2002). *If the world were a village*. Tonawanda, NY: Kids Can Press.
- Spar, D. (2006). *The baby business: How money, science, and politics drive the commerce of conception*. Cambridge, MA: Harvard Business School Press.

Vandermeer, J. & Perfecto, I. (2005). *Breakfast of biodiversity: The political ecology of rain forest destruction*. Oakland, CA: Food First Books.

Volti, R. (1995). *Society and technological change* (2nd ed.). New York: St. Martin's.

Journals

Technology and Culture. The international quarterly of the Society for the History of Technology, The University of Chicago Press.

Magazines

American Heritage of Invention and Technology. Quarterly, Forbes.

Discover. A monthly publication on science, technology, and the future published by Bob Guccione, Jr.

IEEE Technology and Society Magazine. A quarterly publication by The Institute of Electrical and Electronics Engineers.

Scientific American. A monthly publication by Scientific American, Inc.

Miscellaneous Media

Cable News Network (Producer). (2007). *Planet in Peril* [Television series]. Atlanta: Turner Broadcasting System.

Drain, M. (Executive Producer). (1995). *Driving Passion*. [Television series]. Atlanta: Turner Home Entertainment.

DeVito, D., Shamberg, M., Sher, S. (Producers), & Niccol, A. (Writer/Director). (1997). *Gattaca* [Motion picture]. United States: Columbia Pictures.

Guggenheim, D. (Director). (2006). *An Inconvenient Truth* [Motion picture]. United States: Lawrence Bender Productions.

Weiner, H. (Writer & Director). (1999). Land of plenty, land of want [Television series episode]. In M. Weiner (Producer), *Journey to planet earth*. Washington, D.C.: Screenscope, Inc.

Weiner, H. (Writer & Director). (1999). The urban explosion [Television series episode].

In M. Weiner (Producer), *Journey to planet earth*. Washington, D.C.:

Screenscope, Inc.

Weiner, H. (Writer & Director). (2005). Future conditional [Television series episode]. In

M. Weiner (Producer), *Journey to planet earth*. Washington, D.C.: Screenscope,

Inc.

Weiner, H. (Writer & Director). (2005). The state of the planet [Television series

episode]. In M. Weiner (Producer), *Journey to planet earth*. Washington, D.C.:

Screenscope, Inc.

Guggenheim, D. (Director). (2006). *An Inconvenient Truth* [Motion picture]. United

States: Lawrence Bender Productions.