MOREHEAD STATE UNIVERSITY

DEPARTMENT OF INDUSTRIAL ENGINEERING AND TECHNOLOGY
SYLLABUS
IET 600/AGR 600- Impact of Technology
Fall 2009

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COURSE INFORMATION

IET 600, AGR 600. Impact of Technology. (3-0-3); I. Prerequisite: Graduate standing. A study of impact of technology on individuals, society, and the environment. The topics will include trends and development of technology, technology systems, technological assessment and innovation.

COURSE CONTENT

Purpose of the course.

The purpose of IET 600 is to help students comprehend, analyze, and evaluate the nature, scope, and function of technology in society. Students will be challenged to consider and assess the evolution of technology and society and their mutual impact. The course is intended to facilitate the integration of student views into a coherent and realistic perspective of a technological society. Students will be challenged to consider and assess the evolution of technology and society and their mutual impact. The course is intended to facilitate the integration of students' views into a coherent and realistic perspective of a technological society. To accomplish this, students will be motivated to reflect upon complex issues and then engage in dialogue, through individual and group activities, designed to enhance and enrich their awareness of the complexity of technological issues.

Outline of course content including required textbook and recommended readings:

Outline of Course

Session One	Topic
1.	History of Technology, Science & Technology in Society, Evolution of Despair, the Great Leap Forward.
2.	Energy, an Energy Strategy for 21st Century, the Immortal Waste, Hydroelectric Power, Solar Energy, Wind Power.
3.	Energy Crisis, Global Energy Resources, Wind Power, the Electric Car, Trends of the 21st Century, Explore Future Options.
4.	Ecology, the Grim Payback of Greed, Young at Risk, Exploiting the Oceans, Buried Displeasure: The Love Canal.
5.	Environmental issues, the Endangered Species Act, Air Poisons around the World, Earth Day, and Rain Forests May Offer New Miracle Drugs.
6.	Population, Putting the Bite on Planet Earth, Can Population Feed Itself, Population and Development.
7.	War, Politics, and Technology, International Defense Profile.
8.	United States Technology Transfer and International Economy.
9.	The Wars of Tomorrow.
10.	Social Responsibility, Ethics, Crime in Cyberspace.
11.	Social response to technological change.
12.	The stability of traditional social institutions.
13.	The technologist's responsibility for the future of technology.
14.	Health and Technology, Breakthrough in medicine, Organ Concert, Physician-Assisted Suicide, Poverty.
15.	Technology and the Third World.
16.	Technology of the Future.

Textbook and Reference Sources

Required Texts:

Hjorth, L. S., Eichler, B. A., Khan, A. S., and Morello, J. A. (2008). Technology and Society: A bridge to the 21st Century (2nd Edition). New York, NY: Prentice Hall.

Friedman, T. L. (2006). The World is flat. New York, NY: Farrar, Strauss and Giroux

Reference Texts:

Barry, J.A., Technobabble, Cambridge, Mass.: MIT Press, 1991.

Bunch, Bryan. H., The Henry Holt Handbook of Current Science & Technology, New York: Holt, 1992.

Burke, James, and Ornstein, Robert, The Axemaker's Gift: A Double-Edged History of Human Culture, New York, NY: Putnam's, 1995.

Gradwell, J. B, Technology--Shaping Our World, South Holland: Goodheart-Wilcox Co, 1996.

Landow, George, Hypertext: The Convergence of Contemporary Critical Theory and Technology, Baltimore: Johns Hopkins University Press, 1992.

Markert, L.R., Contemporary Technology, South Holland, IL: Goodheart-Willcox, Inc., 1997.
Negroponte, Nicoholas, Being Digital, New York: Knopf, 1995.
Pool, Robert, Beyond Engineering: How Society Shapes Technology, New York: Oxford University Press, 1997.
Postman, Neil, Technopoly: The Surrender of Culture to Technology, New York: Alfred A. Knopf, Inc., 1992.
Stoll, Clifford, Silicon Snake Oil: Second Thoughts on the Information Highway, New York: Doubleday, 1995.
Teich, Albert, Technology and the Future, New York: St. Martin's Press, 1993.
Thode, Bradley R., and Thode, Terry, Technology, Albany, NY: Delmar Technology Series, 1994.
Waetjen, W.B., Technology and Human Behavior, Reston, VA: International Technology Education Association, 1990.

A List of Readings: A Gift of Fire: Sara Baas; Democracy and Technology; Technology Lost, Practical Ethics for a Technological World, Managing High Technology and Innovation

References Videos:

A is for Atom, Black Power, Do Scientists Cheat? Mastering Change
Old Ways, New Games, Politics, People, and Pollution
The Engineers' Plot, the Mouse that Laid the Golden Egg: Industrial Biotechnology
The Politics of Trees, the World at Your Fingertips
To the Brink of Eternity, T.Rex Exposed, Winning Strategies
Whistleblowers, Information Technology: Heaven or Hell, 3 volumes

Performance objectives of the course.

Upon successful completion of the course, students will be able to:

1. Construct a philosophical perspective regarding technology in relation to other domains of knowledge and human adaptive systems.

2. Characterize technology as a broad and dynamic phenomenon that includes the interaction of volition, knowledge, resources, processes, and outcomes.

3. Trace the history of selected technological developments with consideration for the impact each has had on the condition of the world.

4. Identify technological developments that are currently having a significant impact on individuals, society, the global community, and the environment.

5. Assess new developments and identify impact these developments are likely to present.

6. Speculate about future technological developments and project impact scenarios.

7. Identify issues resulting from significant technological development considering the past, present, and future.

COURSE REQUIREMENTS

A. Case Studies*:*

Students will use the scientific method to solve case study problems:

1. Identify the opportunity
2. Define the scope
3. Analyze the current process
4. Envision the future process
5. Implement changes
6. Pilot/verify changes
7. Continuously improve

B. **Individual and group presentations**: Students will, individually and in pairs, prepare PowerPoint presentations of topics from the textbook and related to technology and society.
C. **Examinations:** To identify the student's understanding of the topics covered, the midterm and final exam will use discussion/essay questions.
D. **Research project**: Students will use the scientific method to investigate, analyze, and report a technology problem with some personal relationship (i.e. work, home, life) and present the conclusions to the class near the end of the semester.
E. **Electronic Portfolio**: At the end of the semester, students will have carefully prepared an electronic course portfolio containing all course materials in an organized and professional format.

Evaluation/Grading:

Individual projects, reports/presentations (5 @ 20 points each)	100
Group presentations (3 @ 50 points each)	150
Involvement-Participation/Discussion Board	100
Midterm exam	100
Final exam	200
Research project	300
Electronic Portfolio	50
Total Points Possible	**1000**

Academic Honesty: While team/group work and group learning is highly recommended, no form of plagiarism will be tolerated.

<u>Class Attendance:</u> Perfect and punctual attendance is expected.

<u>Policy for Accommodating Students with Disabilities:</u> Professional staff from MSU Academic

Services Center (ASC) coordinates efforts to address accessibility needs and class accommodations with instructors of students who have learning or physical disabilities. IET Faculty will cooperate with the ASC staff to accommodate the needs of students taking departmental courses.

B. Grading Scale:

90-100% = A 80-89% = B 70-79% = C 60-69% = D Below 60% = E

ACADEMIC HONESTY

While team work and group learning is highly recommended, no form of plagiarism will be tolerated.