Syllabus
Engineering Technology
University of North Texas
Course Title: Technological Systems
Course Prefix and Course Number: ENGR 1030

Semester: Spring 2012

The Engineering Technology Department, in cooperation with the Office of Disability Accommodation, complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. Please present your written accommodation request, provided to you by the Office of Disability Accommodations when you register with the Office, to the instructor prior to the fourth day. The Office of Disability Accommodations is located in the University Union room 321, (940) 565-4323 and is open from 8:00 a.m. to 5:00 p.m. Monday through Friday.

The College of Engineering Advising Office is located at the University of North Texas, Discovery Park, (940) 565-4201 and is open from 8:00 a.m. to 5:00 p.m. Monday through Friday. Ask for Chris Heiden.

SAFETY CATEGORY: 1
(Lecture Class With no Lab)

Final Examination: on Blackboard

ENGINEERING TECHNOLOGY
COLLEGE OF ENGINEERING
UNT DISCOVERY PARK

University of North Texas
Engineering Technology
940/565-2022
DATE PREPARED: 1/10/12

PREPARED BY: Dr. Vijay Vaidyanathan
Office: A160E, University of North Texas Discovery Park,
Phone: (940) 565-2022  Fax: (940) 565-2666  E-mail: vijay.vaidyanathan@unt.edu
Office Hours: Monday, Tuesday: 10:00 a.m. - 1:00 p.m.
Virtual Office Hours: 1:00 p.m. to 5:00 p.m. Thursday through Friday

COURSE NUMBER, TITLE, CREDIT HOURS:
ENGR 1030. Technological Systems. 3 hours

DESCRIPTION:
Introduction to technological systems with focus on past, present and future trends and influences and impact of the systems of technology on society. Satisfies the Social and Behavioral Sciences requirements of the University Core Curriculum.

PREREQUISITES:
None

REQUIRED TEXTBOOKS:
None Required

SUPPLEMENTAL TEXTS AND MATERIALS:
See web sites and Library listings

COURSE OBJECTIVES:
At the conclusion of this course, the student will (be able to):

1. develop and communicate alternative technological explanations or solutions for contemporary social issues.
2. recognize and apply reasonable criteria for the acceptability of historical evidence and social research.
3. examine social institutions and technological processes across a range of historical periods, social structures and cultures.
4. analyze the effects of historical, social, political, economic, cultural, and global forces on the area under study.
5. understand the evolution and current role of US technological systems in the world.
6. differentiate and analyze historical evidence (documentary & statistical) and differing points of view.
7. analyze, critically assess and develop creative solutions to public policy problems.
8. recognize and assume one's responsibility as a citizen in a democratic society by learning to think for oneself, by engaging in public discourse, and by obtaining information about technology through news media.

APPROPRIATE ABET PROGRAM OUTCOMES:
The program must demonstrate that graduates have:
    ABET d. an ability to function on multidisciplinary teams.
    ABET g. an ability to communicate effectively.
ABET h. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
ABET k. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

STUDENT LEARNING OUTCOMES:
Upon completion of this course, students will be able to do the following activities, given the appropriate parameters:

1. Investigate the Internet and utilize campus library periodicals and other publications to access information appropriate to the course. (g,h,k)
2. Locate a museum-quality item of technology that represents the 20th century, research its history and its affect on society and complete a presentation that includes the results of your research and the item. (g)
3. As a member of a team, complete a presentation that explains the place in society of a patented 20th century technological item to the class. (d,g)
4. Write reports (topic assignments) appropriate to technological topics (see "course outline") and submit on time via Blackboard. (g,h,k)
5. Construct an original board game appropriate to a technological topic. (g,h)

INSTRUCTIONAL OBJECTIVES:

1. Generic Assignment and Board Game are based on originality.
2. Assignments are completed and submitted on time via the Blackboard Dropbox.
3. Resubmission of on-time assignments are completed via an electronic mail attachment.
4. English grammar, composition and spelling are expected and graded.
5. Progress reports are constantly available via Blackboard.
6. Mid-term and Final Evaluations are a random selection of questions, in random order, completed within a time limit on Blackboard.
7. Topic Assignments must follow directions as specified on individual cover sheets and include a copy of the cover sheet.

LEARNING STRATEGIES:
Lectures Demonstrations Videos/Films/Slides
Classroom Interaction Student Presentations Team Assignments

COURSE OUTLINE:

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture (Blackboard)</th>
<th>Lecture (Classroom)</th>
<th>Assignments</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>Class Presentations</td>
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</tbody>
</table>

Blackboard includes Welcome, Technology Requirements, How this Course Works, Blackboard Course Organization, Where to get help, Be Prepared for Emergencies, and How to Proceed. Classroom includes Course Introduction, ADA Compliance, Course Justification, Objectives, Learning Outcomes, Required Materials, Course Outline, Course Activities, Generic Assignment Requirements, Class Presentations Requirements, Evaluating Students and selection of dates for class presentations, generic assignments, and board game.
2  Introduction  
Blackboard includes definitions of technology, Eastern & Western logic, Technology Over Time, Technological Advances from one Country, Development of Cities, Impact of Technological Change, Changes Over Time, What is a Human Being, Technology and Privacy, Genetics, and Technology, Society and Culture. Classroom includes a review of Blackboard materials and team presentations on inventions.

3  Women & Technology  
Blackboard includes Women at Work, Societal Attitudes, History or Herstory, Rights and Equality, Equality in the Workplace, Recognition of Women in Non-traditional Fields, Education, Shopping Malls, and Women at Home. Classroom includes a review of Blackboard materials and team presentations on inventions.

4  Production Technology  
Blackboard includes The Cotton Gin, What is Production, Production Materials, What is Production, Economics, Mass Production, Automation, and Waste. Classroom includes a review of Blackboard materials, team presentations on inventions, and submission of first topic assignment.

5  Art & Technology  
Blackboard includes Definitions, Artists as Technologists, Photography and Recordings. Classroom includes a review of Blackboard materials and team presentations on inventions.

6  Technology & Health Care  
Blackboard includes Introduction to Health Care, Today's Medicine, The Practice of Medicine, Medical Ethics, Gene Splicing, The Human Genome Project, Cyborgs, and Thought Control. Classroom includes a review of Blackboard materials and team presentations on inventions. Classroom includes a review of Blackboard materials including review for the midterm, individual presentations on technological items from the last century and submission of second topic assignment.

7  Leisure Time & Sports Tech  
Blackboard includes Cooking, Tennis, Golf, Baseball, Fitness, Sedentary Activities, The Computer, Recreational Activities, Health Clubs, Television, Space Vacations and the Future of Sports. Classroom includes a 75-question midterm exam of randomly selected multiple-choice and true/false questions. Classroom includes a review of Blackboard materials and individual presentations on technological items from the last century.

8  Transportation Technology  
Blackboard includes Early Transportation, Speed, Cost of Transportation, Land Transportation, Water Transportation, Air Transportation, Space Transportation, Magnetic Levitation, and Future Transportation. Classroom includes a review of Blackboard materials and individual presentations on technological items from the last century.
<table>
<thead>
<tr>
<th></th>
<th>Technology &amp; Religion</th>
<th>Technology &amp; Religion</th>
<th>Generic Assignment</th>
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<tbody>
<tr>
<td></td>
<td>Quiz</td>
<td>Group 3 Topic Assignment</td>
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Blackboard includes Religion and Communication, Religion and Transportation, Religion and Construction, Is Coexistence Possible, Embryonics, Xeno-Transplants, and Human Cloning. Classroom includes a review of Blackboard materials, individual presentations on technological items from the last century and submission of third topic assignment.

<table>
<thead>
<tr>
<th></th>
<th>Technology &amp; Religion</th>
<th>Energy &amp; Power</th>
<th>Technology &amp; Music</th>
<th>Generic Assignment</th>
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<tbody>
<tr>
<td></td>
<td>Quiz</td>
<td>Quiz</td>
<td>Quiz</td>
<td>Quiz</td>
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</table>

Blackboard includes Sources of Energy, and Nuclear Waste. Blackboard also includes Introduction to Technology and Music, History, and Contemporary Music. Classroom includes a review of Blackboard materials and individual presentations on technological items from the last century.

<table>
<thead>
<tr>
<th></th>
<th>The Environment</th>
<th>The Environment</th>
<th>Board Game</th>
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<tbody>
<tr>
<td></td>
<td>Quiz</td>
<td>Quiz</td>
<td>Group 4 Topic Assignment</td>
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Blackboard includes The Negative, The Positive, Pollution, Global Warming, Environmental Incidents, Environmental solutions, and Environmental Costs. Classroom includes a review of Blackboard materials, round one of student constructed and evaluated technological board games, and submission of fourth topic assignment.

<table>
<thead>
<tr>
<th></th>
<th>Technology &amp; Fashion</th>
<th>Agriculture &amp; Ranching</th>
<th>Board Game</th>
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<td></td>
<td>Quiz</td>
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Blackboard includes History of Fashion, Clothing, Accessories, Fashion's Effect on Technology, and Store Versus Internet. Blackboard also includes Rural America, Agriculture From the Past, Agrigenetics, Biotechnology, Genetics and Food Processing. Classroom includes a review of Blackboard materials and round two of student constructed and evaluated technological board games.

<table>
<thead>
<tr>
<th></th>
<th>Technology &amp; The Military</th>
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<th>Board Game</th>
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<tr>
<td></td>
<td>Quiz</td>
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<table>
<thead>
<tr>
<th></th>
<th>Technology &amp; The Government</th>
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<th>Board Game</th>
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<tr>
<td></td>
<td>Quiz</td>
<td>Quiz</td>
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Blackboard includes Regulations, Technology Affected by Regulations, Government & Democracy, National Security Agency, The Black Box, Where Government is Important, and Research. Classroom includes a review of Blackboard materials, round four of student constructed and evaluated technological board games, and submission of final topic assignment.

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<tr>
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<th>Final Evaluation</th>
<th>SETE</th>
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<tr>
<td></td>
<td>Quiz</td>
<td>SETE</td>
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</table>

Blackboard includes the Final Evaluation of 75 randomly selected questions. Classroom includes the final resubmission of topic assignments and the completion of SETE.
COURSE REQUIREMENTS - ORAL COMMUNICATION:
1. Each student is to choose one small item of technology that could fit in a museum. These items are things of the 20th century that do not exist anymore but should be preserved as a glimmer of society in that century. They were the result of the “high-tech” of the time. This is telling the big story of technology through common items. The student explains its place in the 20th century. Prepare a document that includes the name of the item, its societal purpose and dates of use.
2. Patents are an important aspect of society. There are many "mad" inventions that were supposed to have a social and/or behavioral affect on society. Each team of students will present, via PowerPoint, a "real" patent, including the drawings, explain its supposed affect on society and how it was to work.

COURSE REQUIREMENTS - WRITTEN COMMUNICATIONS:
1. Written Topic Assignments are required and selected from those provided on Blackboard.
2. A written report is required as part of the Generic Assignment.
3. Written step-by-step instructions are required for the developed original board game.

COMPUTER USAGE:
1. The internet is an integral aspect of this blended course. This course makes extensive use of WebCT including submission of assignments completed on a computer and submitted via the assignment drop box, and topics initially presented on WebCT utilizing extensive use of graphics and computer generated quizzes and examinations.
2. PowerPoint slides are used for the team classroom presentations and individual presentations.
3. Topic assignments utilize a variety of software packages including the use of jpeg files.

LIBRARY USAGE:
Access to periodicals and news publications through the University of North Texas Library will be required throughout the course. Collections of Electronic Journals. A huge collection of electronic journals accessible by going to www.library.unt.edu. You can look at the list of titles by clicking on the complete title list. Major Databases contain full-text articles from newspapers, journals, and government publications dealing with social, scientific, historic, economic, political, and global issues. Uncover – brief, descriptive information about articles from multidisciplinary journals. Undergraduates can use this service to obtain selected articles with permission of a librarian. America: History and Life on Disc – contains abstracts to articles appearing in journal titles concerning the history and culture of the United States and Canada. Art Abstracts – cites articles from periodicals published throughout the world. Biological Abstracts – indexes virtually every life science discipline including agriculture and public health. ERIC – premier national database of education literature. Humanities Abstracts – cites articles from English-language periodicals in such fields as art, communications, music, performing arts, and religion. Political Science Abstracts – database of citations to materials devoted to politics. National Center for Health Statistics Publications – good for health, medical and environmental statistics. National Climatic Data Center Online Document Library – good for environmental issues such as global worming. Statistical Abstract of the United States – large collection of statistics on a broad range of topics including science, technology, and the environment.
GRADING ELEMENTS AND WEIGHTS

Mad Inventions Class Presentation = 10%  
Quizzes = 10%  
Topic Assignments Written Reports = 35% (5 at 7% each)  
Board Game = 15%  
Generic Assignment & Class Presentation = 10%  
Mid Term Evaluation = 10%  
Final Evaluation = 10%

GRADING POLICIES:

- 90%+   A  
- 80% - 89%   B  
- 70% - 79%   C  
- 60% - 69%   D  
- 0% - 59%   F  

1. Resubmission of on-time assignments may be competed via electronic mail.
2. English grammar, composition and spelling are expected and graded.
3. Board games based on originality, quality of construction and primarily on how well the game addresses the theme.
4. Progress reports are constantly available via Blackboard.
5. Mid-term and final evaluations will be a random selection of questions in random order, completed on-line within a time limit.
6. Topic assignments written reports must follow directions as specified on individual cover sheets.
7. Topic assignments written reports submitted on time may be resubmitted.
8. Examinations, presentations, board game and on-line quiz grades are determined by the highest score accomplished and not by the number of points possible. (Therefore, there will be at least one student who will earn 100% on the examinations, at least one on presentations, at least one on the board game, and at least one on the quizzes.).

ATTENDANCE/ABSENCES

Regular and punctual attendance is expected for scheduled meetings of this class. Absences may lower a student’s grade. Refer to the UNT catalog for specifics and the Academic Calendar. Authorized absence cards may be obtained from the Dean of Students and make-up work will be arranged.

CLASS POLICIES:

1. All rules relating to academic dishonesty will be enforced in accordance with University policies. Cheating on quizzes, examinations and assignments, and plagiarism on various papers and reports are types of disciplinary misconduct for which penalties are assessed under the UNT Code of Student Conduct and Discipline. Major responsibility for implementing the University's policy on scholastic dishonesty rests with the faculty. Be advised that the instructor of this course supports and fully implements this policy. The following actions will be taken when evidence of such misconduct is observed.
   - The student will be presented with the evidence of misconduct and given an opportunity to explain same.
   - Based on the outcome of this private conference, the matter will be either dropped or the student will be given a grade of "F" in the course and be referred to the Dean of Students for Further counseling and/or disciplinary action.
2. State common law and Federal copyright laws protect my lectures.
   - They are my own original expression.
   - Whereas you are authorized to take notes and create a derivative work from my lecture, the authorization extends only to making one set of notes for your own personal use and no other use.
   - You are not authorized to record my lectures, to provide your notes to anyone else or to make any commercial use of them without expressed prior permission from me.

3. The UNT Catalog procedures on cheating and plagiarism will be vigorously enforced.
   - It is the duty of all students to protect their work so it is not available to others for submission as their efforts.
   - This is especially true of files that are generated on the computer.
   - Students who knowingly allow others to use their work are partners in this unethical behavior.

4. During this course, handouts will be provided to enhance the presentation of certain concepts.
   - These materials are provided strictly for instructional purposes and may otherwise be restricted.
   - There is no authorization for further reproduction or distribution of handout materials beyond that intended to teach the course.

5. This syllabus is subject to change at any time during the semester with changes to be announced in class.

6. Students should schedule at least one hour per lecture hour for study outside class.

7. Grades are based on the student's ability to communicate.
   - Therefore, well written English is expected in all course work and is a factor in report grades.
   - The student's ability to orally communicate is also paramount in this course.

8. Each student should retain graded assignments, quizzes, homework, tests, software generated files and technical reports to document errors in recorded grades and for future reference.

9. There is no limit to the use of calculators for lectures, quizzes, or formal examinations.

10. Challenges to course grade must be presented within 60 days of receipt of grade notices mailed by the University.
    - This will insure the instructor's records are still available to allow a review of the assigned grade.
    - You should first discuss your complaint with the instructor.
    - If you wish to carry the complaint further, contact the Program Coordinator by calling (940) 565-2022.
    - If you are still not satisfied, contact the Department Chair at (940) 565-2022, but ONLY after first discussing your concern with the previous two individuals.

11. An "I" (Incomplete) grade is given only for extenuating circumstances and in accordance with University and Department policies.