PSYCH 445: Technology, Environment & Behavior

Fall 2003
Mon & Wed 4:30- 5:45, St Joseph 221
3 Credits, 29 meetings + Final

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TEXTS:
Required
New York: Vintage Books

Optional:
Childes, J.R. Inviting disaster: Lessons from the edge of technology.

RESERVED READINGS:
Roesch Library (2 hour limit). Most readings are available on E-Reserve, password will be provided in class. Some readings may be available at Reserved Desk, First Floor,

COURSE DESCRIPTION:
Examines the dynamic interaction between technology, environment, and behavior. There is an emphasis on the role of humans as both users and designers of systems. The course focuses on design, man-machine systems and the unintended consequences of decisions made in the design and development of equipment, systems and technologies. Issues relevant to Technosophy (the wise use of technology) are discussed.

OBJECTIVES:
1. Provide a general overview of Systems (definitions, characteristics, measurement of effectiveness, etc). Discuss how we are parts of systems and systems are part of us. Throughout the semester we will examine the interaction between technology, environment and behavior.
2. Examine the design process and factors that influence or should influence the design process.
3. Examine systems within both natural domains (Biological/medical, environmental) & built domains (architectural, business, office, sports).
4. Allow you to explore and report on the interaction between technology, environment and behavior. The topic should be of value to your professional development. Depending on the topic chosen the development of a causal chain may be appropriate.
5. Introduce you to course related material available on the Internet. Familiarity with the Internet will be essential in your professional life.
6. Provide you with a way of thinking about complex situations so as to be aware of different perspectives, criterion, and trade-offs as well as developing measures of effectiveness.

**POLICY:**
1. Honor Code applies. Submission of copied work is a violation and will result in a grade of zero. The University's policy on academic dishonesty will be enforced. Don't plagiarize; give credit where it is due.
2. Knowledge of the assigned readings is presumed. I will assume that you have read and are prepared to discuss the assigned readings on the date assigned. We will all learn by interactive participation.
3. Assignments are due on the date assigned. Assignments received late lose 20% of the grade. Assignments which are late must be submitted within six days after they were due to receive ANY credit. If there is a legitimate reason why an assignment will be late, let me know in advance. Failure to plan is not a legitimate reason.
4. Sharing material: I will share my reference material with you. I need the material returned for use by myself and other students. Failure to return the material to me prior to the next to last class (Dec 3) will result in an incomplete until the material is returned. If the material is not returned by Dec 15th, your final grade will be reduced by one letter. A two letter reduction will be applied to your final grade if the material is not returned or replaced by January 7th, 2004.
5. Advise me of conflicts, problems, etc. as soon as they arise. Addressing these concerns early will prevent molehills from turning into mountains. Communication helps us to solve problems; the sooner you tell me about them, the sooner they will be resolved. If I am not available, my trusty phone answering system or E-MAIL will record your message, be sure to indicate how I can contact you. If the problem is significant and can't wait, call me at home.
6. Attendance: Try not to miss any classes. If you must miss a class, arrange for a classmate to collect handouts, assignment materials, etc. for you. Also arrange to have your assignments turned in if you cannot attend. It is particularly critical that you attend classes during which the procedures for future assignments (e.g. paper) are discussed.

**ASSIGNMENTS:**
1. **PAPER:** By Sept 17th select a topic of interest to you (see the list of potential topics provided later in this syllabus). Your paper is to be based on data and findings with a scientific basis or at least reputable reporters. Avoid anecdotes. Since you will be examining the current literature, I expect to see references from quality sources. No later than Sept 17th, provide me with a one page statement, with the following three numbered sections, in which you specify:
   1) Why the topic is of interest to you,
   2) Outline what you would research and
   3) How you would research the topic.
I will return this to you with my comments by Sept 22th with suggestions and, depending on the topic, some literature/references. After we have agreed and set boundaries on the topic, start work on your outline which is due by 1 October. **DO NOT** start your paper until we have agreed on an outline.

Run-on papers are **NOT** accepted, help both of us by using appropriate headings (derived from the outline). I will provide you with a checklist that describes what I expect. I recommend that you attend to the criteria on the checklist. The last section of your paper must contain three proposed examination questions and their answers.

The paper is due no later than 3 Nov. References should be in APA format if you have completed Psy 217. Alternate formats (e.g. MLA) are acceptable from non-Psy majors and individuals who have not completed Psy 217. References should be listed in alphabetical order in a reference section, not at the bottom of each page.

Your paper will be the basis for your ~20 minute Power Point presentation toward the end of the semester (Starting on 12 Nov). This is your opportunity to share what you have learned with your classmates. Your presentation should be contain the answers to the questions that you proposed, since the class will not have the benefit of reading your paper.
**Early Review Option:**

If you wish, I will review and return, but not grade papers, given to me by October 20 (earlier if possible). This arrangement will allow you to produce a quality paper. You should exchange papers with a classmate, who will perform a critical editorial and technical review of your draft paper. A classmate's critique must be attached to your paper if you want an early review by me. I will provide a copy of a critique sheet.

On Nov 3rd, turn in your final version and a copy of your final version. If you had the paper critiqued by a classmate, also provide their critique sheet and the draft that contains their recommended changes, and my comments. The original will be graded and returned, I will keep the copy. The critiques will be graded and returned. Critiques are a source of extra credit for the individual preparing the critique.

2. **RELATED FINDINGS Mini-Paper:** Write a mini-paper (at least 2 pages, maximum of 4 pages) regarding environment, technology & behavior related issue which you have uncovered in the press (Forbes, Business Week, Fortune, Wall Street Journal, USA Today, NY Times, Time, Newsweek, Dayton Daily News, etc). My objective is to have you consider course related issues in the day-to-day world and their relationship to our class.

* Issues taken from textbooks, class readings, journals, etc. or related to your paper are NOT acceptable.
* The link between the material that you present and our course material must be clearly established (if possible also cite page numbers from our texts or class readings).
* A clipping or a copy of the source material must be stapled to the back of your mini-paper.
* Your mini-paper should provide not only a detailed description of the issue, but also possible solutions and appropriate references (which may come from the text or other sources).

- Mini-papers may be submitted any time during the semester, but no later than 26 November. However, I recommend that you don't wait until then. Early selection of an article that attracts your interest usually results in a better quality product.
* For this assignment you can describe a Future technology/environment & behavior issues: mini paper and discussion (describe risks/benefits)

3. **Icon:** Technology has encouraged the use of icons to communicate information. They are found in traffic signs, stores, automobiles, as well as on interactive displays. Their “intuitive” nature allows us to use them with minimal mental effort. However, we have all encountered unintelligible icons. As part of this class you should identify 2 icons which you find unintelligible and expect that others would also find unintelligible. By Nov 19, provide two pages via email in Word:

- Page One: a copy of the icon (use Print Screen option, if icon is found in electronic media) and the context in which the icon is presented. For example: This icon was found on the stalk of a 2000 Honda Accord. The stalk is located on the right side of the steering column behind the steering wheel (see above photo), other controls on the stalk control the windshield wipers. For icons found in electronic media identify the type of media in which the icon was found; do not specify the software (For example: use “graphics software” as opposed to Paint Shop Pro 7.)
- Page 2: Describe what function the icon performs and hypothesize about the logic used by the icon designer, who developed it. If the software or a manual described the function associated with the icon, include the information it provided on the second page. I will consolidate the icons you provide into a booklet to be used in our icon recognition contest for extra credit (see below), and we will discuss them in class in December.

4. **Good vs Bad technosophy:** Provide an example of particularly good and bad technosophy. It should not be something we discussed in class. Be sure to document and provide references for your examples and describe the issues in detail.

5. **Extra Credit.**

- The previously described review of your classmate’s paper is worth an additional 25 points.
• Icon Contest Winner: The two individuals who correctly identify the most icons from the set of icons submitted by this class will earn 25 points
• Attendance and a well written report (use report form) at the presentation by Sandra Poste on Oct 7\textsuperscript{th} is worth 25 extra points. We will discuss her presentation on Oct 8\textsuperscript{th}.

5. Grading: Points
   Paper 250
   Presentation 100
   Exam 1 100
   Exam 2 100
   Exam 3 (Final) 100
   Baphol Causal Chain 50
   Poor technosophy example 25
   Good technosophy example 25
   Icon report 50
   Related Findings Mini -Paper 50

   Assigned Readings 150
   TOTAL 1000 Points
   PLUS Extra Credit max 75 points

Extra Credit:
   Critique of paper 25 pts
   ICON Contest winners (N=2) 25 pts each
   Poeste Report 25 points

Grading: This scale reflects the new grading system.
A: > 966
A-: 933-965
B+: 901-932
B: 866-900
B-: 833-865
C+: 801-832
C: 766-800
C-: 733-765
D: 700-733
F: < 700

MISCELLANEOUS NOTICES:

1. Learning should be exciting and challenging. Learning requires work. I will attempt to provide you some of the excitement and challenges; I hope you will add to the excitement and provide challenges. We will all work together and learn from each other.

2. Since I have redesigned this course, I am not sure about how much time to devote to specific topics. I may have to make adjustments to the syllabus during the semester.

ET&B Fall 2003.doc
3. Possible Paper Topics (assigned on a first come first served basis); other topics are possible but all topics must be approved.

- The blackout of 2003: Causes and preventive solutions
- Cyber-terrorism (Spam & Blaster Worm)
- Environmental effects on human disorders (e.g. Seasonal Adaptive Disorder)
- Crime Prevention through environmental design (CPTED)
  - Apply defensible space strategies to the UD Campus?
- Correlates of Risk taking
- Gender and Information Technology
- Gender, Work Stress & Health (APA book)
- Innovative/Productive Environments
- Creating an innovative workplace
- Technology & Productivity (working at home using Information Technology)
- Dayton Innovators (Grand Eccentrics)
- Technology and Voting
- Using game technology to enhance learning
- Technology & access to information (library stacks redesign?)
- Safety vs. profits (injuries among workers)
- Workplace Ergonomics: Causes of injuries and effectiveness of injury reduction strategies
- Medical Errors And Solutions
- Interface design (Norman and related texts)
- Web Design (Nielson texts)
- Technology induced stress
- Technology and the Handicapable.
- Technology in Third World Countries
- Working 24/7: Job Performance & Shift Work
- Simulation in the 21 Century
- Impact of automotive technology on behavior (road rage)
- Automation (the good, the bad and the ugly)
- Wi-Fi: It’s use and effectiveness in education. (the hype vs the reality)
- Genes & Behavior
  - Time, Love, Memory by J. Weiner
  - Born That Way: Genes, Behavior & Personality by W. Wright

4. COURSE RELATED WWW SITES: These WWW sites may be of interest to you and lead you to other sites and sources of information. Note: http:// precedes all of these addresses, but not all sites use WWW.

USGOVT Agencies:
- Provides links to Government agencies
  - www.law.vill.edu/fed-agency/fedwebloc.html
- Department of Labor - www.dol.gov
- Census Bureau - www.census.gov
Others:
- AFL-CIO - [www.aflcio.org](http://www.aflcio.org)
- Job Accommodation Network (Designing for Handicapped): [http://janweb.icdi.wvu.edu](http://janweb.icdi.wvu.edu)
- Management Library (list of WWW sites) [www.mapnp.org/library/trng_dev/trng_dev.htm](http://www.mapnp.org/library/trng_dev/trng_dev.htm)
- Web Data:
  - [http://cyberatlas.guggenheim.org/home/index.html](http://cyberatlas.guggenheim.org/home/index.html)
- Technology
  - Technology and Culture (Roesch Library & on-line)
  - Technology and Society (Roesch Library & on-line)
  - Technology and Disability (Roesch Library & on-line)
- [http://www.wired.com](http://www.wired.com)

Good Start point for literature searches:
[www.ohiolink.edu/internet/#indexes](http://www.ohiolink.edu/internet/#indexes) or Ohio Link thru UD Library
Be sure to use PsyINFO and Science Citation Index (find a seminal article first)

Writing Style Material:
- Good list of sites, with samples: [http://www.docstyles.com](http://www.docstyles.com)
- How to reference electronic sources in APA style:
  - For some examples see:
    - [http://owl.english.purdue.edu/handouts/research/r_apa.html](http://owl.english.purdue.edu/handouts/research/r_apa.html)
    - [http://www.apa.org/journals/webref.html](http://www.apa.org/journals/webref.html)
    - [http://www.beadsland.com/weapas](http://www.beadsland.com/weapas) (Use IE)

5) Assignments which require more than one page to complete must be stapled (no paper clips, no dog ears). I have learned that pages get separated. If a staple isn't long enough use a binder clip. Be sure to put you name on the first page.

6). Examinations will be true-false, multiple choice, fill-in-the-blank and short essay. Some examination questions may require use of the WWW.
PSYCH 445: Technology, Environment & Behavior  
COURSE SCHEDULE - Fall 2002  
(Subject to Revision)

Aug 26 - Sept 29
- Part 1: Overview
  - Entrance Exam
  - Human Factors and Design in-class exercises
  - Define: Environment, Technology & Behavior
  - The Changing Nature of Work
  - Technosophy: Wise use of technology
- Part 2: Systems concerns
  - What is a system?
  - How do human and systems interact?
  - How is system performance measured? What performance is measured? Why?
    - How does the performance metric influence behavior?
  - SHEL Model
  - Case Studies of Problems/Accidents (Third brake light, TMI, etc)
  - Causal Chain
  - Types of effects

September 17: Paper Topic Selection  
October 1: Paper Outline due

Oct 7: Sandra Poste Lecture on Water usage  
Oct 8: discuss Poste lecture, cellphone assignment discussion

Oct 13 & 15: Human Factors & Ergonomics Society Meeting. No classes  
  Design cellphone and work on papers

October 20: Cellphone presentation & discussion.  
  Last day for early review of paper

Oct 6: Exam 1 Material presented in Parts 1 & 2, and turn in take home assignment to develop Causal Chain on Chemical “accident at Baphol

Oct 8: Discuss Baphol Causal Chain

Oct 20: Papers due for early review, if desired  
Nov 3: Papers due

October 8 - November 12 Unintended Consequences  
- Part 3: Domains (based on the interests, needs, and experience of class members, we will selectively examine some of the following areas. Most of them are addressed in our text book.
  - Business
    - WorldCom  
    - CEO Salaries
  - Medical
    - Medical errors (Inst of Med)
    - Use of Human Subjects
  - Biological
    - Pests  
      - Animal  
      - Vegetable
November 12 - Dec 1
  • Part 4: Paper presentations start

November 5th: Exam # 2 on Part 3

November 19 Icon material due  
November 26: Thanksgiving Holiday Begins

December 3
  • Part 5: Technosophy revisited: The Wise use of Technology
    o Automation
    o Future Technologies

December 8
  Christmas on Campus (no class)

December 10: Icon discussion
  Class critique & evaluation

December 15, 4:30, SJ 221
  • Final Exam (based on presentations & material covered in Part 4 (student presentations) and Part 5