

# **Technology & Environmental Problems**

## **Course Syllabus**

Arizona State University  
JUS 200 (42569) – Fall 2005  
Monday & Wednesday 10:40 – 11:55  
Location: EDC 117

### **Instructors**

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### **Course Description**

This course explores the complex interplay between technology and environment. In particular, we are interested in the choices that individuals and communities make with technological innovation/application and the social, cultural, environmental and political worlds that these choices create. Our case studies will be drawn from nuclear technologies, biotechnologies, and chemical technologies. We seek to explore the designs of technological systems and how these designs shape the range of options that are possible on a number of levels.

### **Required Texts**

1. Pellow, David and Lisa Park. 2002. *The Silicon Valley of Dreams*.

The first three weeks of readings can be accessed on Blackboard.

In addition, a reading packet will be available at Alpha Graphics well before Week 8 when they are assigned.

## **Grading**

On-line Journal	20%
Paper #1	30%
Paper #2	50%

(a full letter grade system will be used in this course, not +/-)

## **Course Expectations**

*Attendance:* This class will be conducted with a focus on lectures, activities, and in-class discussions. Because of this format, you are strongly encouraged to attend all classes. Formal attendance will not be taken, but it is vital that you not be excessively absent or tardy. You must turn in assignments ahead of time and arrange to get notes from a colleague if you are going to be absent. Finally, if you fail to show up for a scheduled meeting with the instructors or TAs without canceling 24 hours in advance, your final grade will be docked 5 points.

*Reading:* Complete all readings (and other assignments) prior to the class meeting for which they are scheduled. The readings will be drawn from the required text for the course, the course reader, Blackboard, or Internet web pages. You must bring readings (or copies of them) to class for the dates they are assigned. In some cases, we may distribute photocopied readings to you in class. See the course outline below for details.

*Participation:* Through communication, ideas are formed, revised, borrowed, and developed. It is through argument, description, explanation, and improvisation – within a community – that individual learning flourishes. This course requires full participation (including active listening, facilitating, note-taking, and question-asking) to create an environment of open and shared learning. An effective participant is not someone who simply talks frequently, but someone who reliably offers thoughtful insights that help others to learn.

*Writing:* Writing is one of the most productive forms of thinking. No late or emailed writing assignments will be accepted. Please double-space lines, use 12-point font and 1" margins, and be certain to include a references section that documents all your sources. Papers must be stapled or they will not be accepted. The sociotechnical infrastructure is unreliable, so plan accordingly and print papers well in advance.

*Technology:* Laptop computers and other portable technologies should be used in class only as learning-facilitation tools. During class, it is not acceptable to play games, answer email, surf the web, answer cell phones, text message, or engage in other non-class-related activities. Your final grade will be penalized if you break this rule. Why? Not only do these practices negatively affect your learning and participation, but they also distract others and create an environment of disrespect.

## Course Assignments

### 1. On-line Journal:

Starting in Week 2, on-line journal entries of approximately 500 words are due every Friday evening by 6 PM. Journal entries should be based on the reading, discussion, and the lecture(s) for the week. You must show that you did the reading and listened attentively to the lectures, but not, for example, by listing your reactions in a series of unconnected paragraphs: you must write a short essay that develops them as a whole. We will look not only for your reactions, but more importantly why you had them. Try to give reasons for your reactions, but if you are not sure about your reasons, at least try to state the dilemma in which you find yourself. It is even acceptable, in other words, to write an essay about your confusion.

We suggest, therefore, that you jot down ideas for your essays as you read or listen to the lectures, and afterwards step back for a moment to reflect on your overall reaction, that is, the theme for your essay. It is best to take a critical perspective for your theme. A critical perspective does not require that you be against the ideas expressed in the reading or lectures. It means simply that you have asked yourself some hard questions. What are the alternatives to your reaction? Why is your reaction better than the alternatives? It is always important to remember, especially when the issues in question concern how we should live, that your first reaction may well be defensive, often accompanied by some intense feelings. It is appropriate to explore these feelings in your essay, though it will not always be easy to get to the bottom of them. You will need patience and honesty if you wish to get beyond the level of gut reaction and opinion to the level of justified belief.

*Mechanics:* Post your entries to our course page on Blackboard (<https://myasucourses.asu.edu/>) under the proper week heading (e.g. "Week 2") in the "discussion board" section. If you compose the entry in a word processing program, please cut-and-paste the text into Blackboard rather than attaching a file. These assignments will be graded on a pass / fail basis. If you make a sincere effort, you will pass. As with everything else, feel free to check with us at any time throughout the semester if you are concerned about your progress with journal entries.

### 2. Individual Papers:

There will be two individually composed papers required for this course. The first paper (due October 17) needs to be 6-8 pages, focusing on issues related to the first book we will read. The second paper (overview due November 21; final version due after course is finished at a to-be-determined date) needs to be 10-12 pages, focusing on any issue relevant to the course. We will provide greater detail on each of these assignments as we approach them.

We reserve the right to distribute unannounced quizzes on the reading or lecture material. Any missed points on these quizzes will be deducted from your journal entries. Quizzes may not be made-up if you are absent.

### **Academic Honesty**

In order to avoid plagiarism, your papers must provide full citations for all references: direct quotes, summaries, or ideas. While you are encouraged to develop your thinking with your peers, you cannot use their material without citing it. Work from other courses will not be accepted in this course. Allowing your writing to be copied by another student is also considered cheating. Please review the Student Code of Conduct for complete guidelines on academic honesty. Note: Any instance of plagiarism or cheating will be grounds for failure of the entire course or expulsion from the university.

### **Gender-Fair Language**

Language structures thought and action. Biases in language can (and do) naturalize inequities. Imprecise language also signifies un-interrogated values and sloppy thinking. For all of these reasons, the use of gender-fair language is expected in this course. For example, do not use words like "mankind" or "men" when referring to people in general; alternate between "she" and "he" instead of always using "he", or construct sentences in the plural instead of the singular so you can use "they" or "them" and avoid the problem altogether.

### **ESL/LD Students**

Course requirements can be adjusted to serve the needs and capabilities of ESL and LD students. Please speak with the primary instructors during the first two weeks of class to make arrangements. Students may be advised to attend additional sessions during the instructors' office hours so they can draw comparable value from the course.

**Course Schedule** (subject to revision)

**Week 1**      **Introduction**

August 22      Course introduction [synchronic / diachronic insights]

August 24      Course concepts [readings available from Blackboard]

Winner, Langdon. “Do artifacts have politics.”

Weinberg, Alvin. “Can technology replace social engineering?”

**Week 2**

August 29      Historical perspectives [readings available from Blackboard]

Marx, Leo. “Does improved technology mean progress?”

Bush, Corlann Gee. “Women and the assessment of technology.”

August 31      Woodhouse, Edward J. and Dean Nieuwsma. “Democratic Expertise: Integrating Knowledge, Power, and Participation.”

Fiorilli, Leonard & Richard Sclove. 1997. “Technology by the People.”

**Week 3**

September 5      LABOR DAY (No class)

September 7      [readings available from Blackboard]

Beck, Ulrich. 1990. “From Industrial Society to Risk Society: Questions of Survival, Social Structure and Ecological Enlightenment.”

**Week 4 - Chemical**

September 12      *Silicon Valley of Dreams 1-22*

September 14      *Silicon Valley of Dreams 23-58*

**Week 5**

September 19      *Silicon Valley of Dreams 59-84*

September 21      *Silicon Valley of Dreams 85-136*

**Week 6**

September 26      *Silicon Valley of Dreams 137-168*

September 28      *Silicon Valley of Dreams 159-222*

## Week 7

October 3

Smith, Ted. 1997. "The Dark Side of High-Tech Development."  
[http://www.svtc.org/resource/news\\_let/drkside.htm](http://www.svtc.org/resource/news_let/drkside.htm)

Doherty, Brendan. 1998. "Intel Outside."  
[http://weeklywire.com/ww/04-27-98/alibi\\_feat1.html](http://weeklywire.com/ww/04-27-98/alibi_feat1.html)

Research your zip-code on [www.scorecard.org](http://www.scorecard.org)

Chatterjee, Pratap. 1996. "USA: Intel Computer Chip Plant Tests New Environmental Rules." [Available on Blackboard]

Intel. 2003. "Intel in your Community: Arizona Environment."  
<http://www.intel.com/community/arizona/envIRON.htm>

October 5

Center for Health, Environment, and Justice. 1998. "Love Canal: the Start of a Movement." <http://www.chej.org/Lovecanal.html>

Woodhouse, Edward J. "Social Reconstruction of a Technoscience?: The Greening of Chemistry." <http://www.rpi.edu/~woodhe/docs/green.html>

## Week 8 - Nuclear

October 10

Nuclear Readings I

"Origins of the Atomic Age," Ch. 1, pp. 9-33, Alan Winkler: Life Under a Cloud: American Anxiety About the Atom (New York: Oxford University Press, 1993)

On Pres. Truman and the Bomb:  
<http://www.peak.org/~danneng/decision/usnews.html>

October 12

Nuclear Readings II

"The Question of Control," Ch. 2, pp. 34-57, Alan Winkler: Life Under a Cloud: American Anxiety About the Atom (New York: Oxford University Press, 1993)

"Introduction," pp. 1-13, Stuart W. Leslie: The Cold War and American Science: The Military-Industrial-Academic Complex at MIT and Stanford (New York: Columbia University Press, 1993)

## Week 9

October 17

**PAPER ONE DUE - FILM – No Readings**

October 19

Nuclear Readings IV

“Victims of the Bomb,” Ch. 7, pp 395-431, Arjun Makhijani and Stephen I. Schwartz, Stephen Schwartz (Editor): Atomic Audit: The Costs and Consequences of U.S. Nuclear Weapons (Washington, D.C.: The Brookings Institution Press, 1998)

**Week 10**

October 24 Nuclear Readings V

“Human Radiation Experiments,” Ch. 6, pp. 118-142, [David Kauzlarich](#), [Ronald C. Kramer](#): Crimes of the American Nuclear State: At Home and Abroad (Northeastern University Press, 1998)

Official US Department of Energy Website: <http://www.eh.doe.gov/ohre/>

October 26 Nuclear Readings VI

“Nuclear Wasteland,” Ch. 4, pp. 81-120 in Valerie Kuletz, The Tainted Desert: Environmental and Social Ruin in the American West (New York: Routledge, 1998)

**Week 11**

October 31 Nuclear Readings VII

“Yucca Mountain: Good Riddance, Bad Rubbish,” Ch. 7, pp. 203-225, in Kai Erickson, A New Species of Trouble: The Human Experience of Modern Disasters (New York: W.W. Norton, 1995)

Visiting Radioactive Sites as Tourist?: <http://www.atomictourist.com/>

November 2 Nuclear Readings VIII

“Strengthening Atomic Accountability,” Ch. 11, pp. 545-557, by Stephen I. Schwartz, in Stephen I. Schwartz (Editor): Atomic Audit: The Costs and Consequences of U.S. Nuclear Weapons (Washington, D.C.: The Brookings Institution Press, 1998)

“Alternatives to Nuclear Fission,” Ch. 11, pp. 243-285, in Richard Wolfson: Nuclear Choices: A Citizen’s Guide to Nuclear Technology (Cambridge, MA: The MIT Press; Revised edition, 1993)

**Week 12 - Biotechnology**

November 7 Movement for a Socialist Future. 2003. “How corporations use 'biopiracy' to patent food.”

<http://www.socialistfuture.org.uk/globaleconomy/The%20Issues/biopiracyfood.ht>

[m](#)

Shand, Hope and Pat Mooney. 1998. "Terminator Seeds Threaten an End to Farming."

[http://www.thirdworldtraveler.com/Transnational\\_corps/TerminatorSeeds\\_Monsanto.html](http://www.thirdworldtraveler.com/Transnational_corps/TerminatorSeeds_Monsanto.html)

November 9: Definitions of Bioprospecting. <http://en.wikipedia.org/?title=Bioprospecting>

Examples of Bioprospecting. <http://www.colby.edu/personal/s/smsahve/>

Bioprospecting: Successes, Failures, and Viability as a Global Regime.

<http://www.colby.edu/personal/s/smsahve/bio%20web%20page%20final.htm>

Bioprospecting or Biopiracy?

<http://www.utmj.org/issues/79.3/CAM.pdf#search='bioprospecting'>

Lust for Life - ethics of bioprospecting by pharmaceutical companies.

[http://www.findarticles.com/p/articles/mi\\_m1525/is\\_3\\_85/ai\\_62828695](http://www.findarticles.com/p/articles/mi_m1525/is_3_85/ai_62828695)

Corporations Bioprospecting Indigenous Genes.

<http://www.organicconsumers.org/Patent/bioprospecting.cfm>

### **Week 13**

November 14 [readings available from Blackboard]

ETC Group. 2003. "Nanotech Un-gooed!"

Joy, Bill. 2000. "Why the Future Doesn't Need Us."

November 16 [readings available from Blackboard]

Winner, Langdon. 2003. Congressional testimony on "The Societal Implications of Nanotechnology."

Sarewitz, Daniel and Edward Woodhouse. "Small is Powerful."

Bennett, Ira and Daniel Sarewitz. "Too Little, Too Late?: Research Policies on the Societal Implications of Nanotechnology in the United States" (Working Paper).

### **Week 14**

November 21 **OVERVIEW OF FINAL PAPER DUE**

November 23: Berner, Robert. 1997. "A Holiday Greeting the Networks Won't Air."

<http://www.ecoplan.org/ibnd/general/mediareports.htm>

Webbing: Calculate your ecological footprint (<http://www.ecofoot.org/>)

**Week 15    Interventions?**

November 28 [readings available from Blackboard]

Frances Moore Lappe, 2004. Hope's Edge: The Delicious Revolution

November 30 [readings available from Blackboard]

Reading on Seed Saving

**Week 16**

**December 5    Last Day of Class - Discussions  
Final Paper Due – To be announced**