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Fall 2000

PHI/STV 256: Science, Technology, and Society

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Professor: Dr. Kristin Shrader-Frechette

Class Time: Tuesday/Thursday 12:30-1:45

Classroom: 240 DeBartolo

Website: <http://www.nd.edu/~kshrader/courses/256/>

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To help the professor learn everyone's name, quickly, please sit in the same spot for every class. Also, please bring a photo by class 2 or 3 at the latest, so professor gets to know you.

Place of Office Hours: Decio 309 (sign-up sheet available on office door)

Professor's Office Hours: Tuesday, Thursday: 3:30-4:00; Wednesday 2:50-4:00 p.m. or any other day and time, by prior appointment

Course Goals: to understand the relationships among science, technology, and society;  
to evaluate the social, cultural, and ethical assumptions underlying these relationships;  
to gain some philosophical and humanistic perspectives on how science and technology affect our lives.

Course Requirements: active analysis in each class, Tuesday quizzes, possible midterm test, possible final, 3 short papers, attending 2 afternoon/evening lectures.

Course Texts: TR = H. Lewis, Technological Risk, 1990 (will not be on midterm test, final)  
TV = Shrader-Frechette and Westra, Technology and Values, 1997 (will be on test, final, and quizzes)

Basis for Determining Course Grade: (students in course can vote for option A or option B)

Option A: 20 percent, final exam (objective)  
20 percent, midterm test (half essay, half objective)  
20 percent, 4 short papers, 1 page each, as specified later in syllabus  
20 percent, (verbal) analysis of articles: analyze at every class.  
20 percent, Tuesdays' 5-minute quizzes on readings for the week

Option B: 33 percent, 3 short papers, 1 page each, as specified later in syllabus  
33 percent, in-class (verbal) analysis of articles; analyze at every class  
33 percent, Tuesdays' 5-minute quizzes on readings for week

Final Grade: Students who wish to receive their grades immediately and/or to know how professor computed grades should turn in a stamped, self-addressed envelope with the final exam.

Grading Procedures: (1) In order to get to know students and to maximize fairness, Dr. Shrader-Frechette will do all grading/office hours herself, without a TA. Please come to office hours, or make an appointment by signing sheet, or see her at class. She typically will not be answering e-mail quickly, because she is overwhelmed by hundreds of messages. Be sure to ask

questions (on previous material) at beginning of each class. Be sure to see her early, several weeks ahead, if you have questions about your class presentation or paper.

- (2) On all assignments and tests of any kind, the professor presupposes correct grammar and spelling. Students will lose points for all errors of spelling or grammar, as well as for logical, conceptual, or factual errors made in any course work. Be sure to use spell check and grammar check so that papers have no errors. Students also will lose points for not adhering to the paper format. Be sure to make papers only one page.

Extra Credit: Extra-credit papers can be done by students who can choose topics from the accompanying list, one topic per student. Use same format as for paper 4. Extra-credit papers are due 10-26-00.

Exams: For the midterm test and final exam, the professor will give students study sheets from which the exams will be taken. Class notes and study sheets are at the website.

Late papers/tests: Because of the importance of treating everyone equally, there will be neither make-up tests nor acceptance of late papers unless the student notifies the professor, before the day and time of the test/deadline, about personal/ family sickness or family death. If students must miss class because of an athletic competition, they should take the Tuesday quiz on the previous Thursday (after class), and they should turn in papers early, at the last class before they leave.

Format for Four Papers: Turn in two copies of each paper. Be sure to use examples to back up your arguments in your paper. Try to use professional or semi-professional, non-popular journals, and do not use material that is merely on the web. Do not use any course texts or readings as part of your bibliography; do not merely summarize or review what we have already said in class. Try to use the five logical criteria to argue for your position, and be sure to use second- or higher-order ethical arguments that consider crucial objections.

Paper 1: Students should write a one-page, double spaced, 3-paragraph essay either on "one of the most serious technological hazards society faces today," or on "a serious technological threat in my home town." Each paragraph should explain, respectively, (1) the nature of the hazard being discussed, (2) why the hazard arguably is so serious, and (3) what we, as individuals, can do to address this hazard. Please staple to your one-page essay a xerox copy of any article/book chapter that discusses the problem/hazard you choose. At the bottom of your one-page paper, put a full bibliographical reference for this article, and be sure the article is from after 1990. At upper right hand corner of one-page paper, put your first and last names.

Paper 2: Same format as paper 1, except that the topic is "a moral hero who actively chose to help society face some technological threat." Alternatively, students may read a book-length, pre-1990 biography of Karen Silkwood, Ralph Nader, or Rachel Carson, in order to do this assignment. The three paragraphs should address, respectively, (1)

who the moral hero is and what he or she did, (2) the obstacles the moral hero had to overcome in order to behave heroically, and (3) whether you believe you would/could behave as the moral hero behaved. (Examples of such moral heroes might be scientists who warned of AIDs or of passive smoke.) Include at least one bibliographical reference, since 1990, at bottom of page. Staple xerox copy of article to paper.

- Paper 3: Give three different one-to-two sentence quotations from 3 chapters (chs. 4, 5, 6, respectively) in the Lewis book and be sure to give the page number (in parentheses, at end of quotation) from which the quote is taken. After each short quotation, state in one sentence some respect in which any claim in the quotation is incomplete or makes a faulty assumption or leads to implausible or undesirable consequences. This sentence should be of the form "The claim X is incomplete (leads to implausible consequences; make a questionable assumption) because...." After each statement of the quotation and statement of the assumption/incompleteness/consequences give one sentence (argument) of your own of the form "This incompleteness/consequences is damaging to Y's argument because...." And back up your sentence in the "because" clause. You should give only 3-4 sentences for each of the three (three-part) items, and these sentences will provide, in order: (1) quotation, (2) incompleteness/consequences /assumption claim, (3) argument. Paper length: maximum 1 page, typed, double-spaced between three main items and between (1), (2), and (3). Single-spaced elsewhere.
- Paper 4: In-class presentation, pro or con, as chosen by student: On one sheet of paper, type 5 to 7 positive (supporting arguments) claims, if you are "pro," or 5 to 7 negative (rebutting arguments) claims, if you are "con." Each claim should be of the form "A is arguably correct/incorrect about B because C." Number each of your 5-7 arguments. If your in-class analysis is of a book, give a short, single-spaced abstract of the book, before you give your own arguments. Be sure to avoid logical fallacies and be sure to use examples to support or refute claims. Provide two copies of this single page to professor and one copy of this paper to each member of the class. On a second page, stapled to the first, provide at least 3 full, bibliographical citations to important articles and books (since 1990) relevant to the topic under discussion. These should not be merely from websites, because that material is not always refereed. Each student should choose a topic (first come, first served) from those listed on the topics for each day of class. Unused topics can count for extra credit.

## Course Overview

Note: There will be 2 special afternoon/evening lectures, outside class times.

| DATE   |      | CLASS CONTENT   | ASSIGNMENT FOR THIS DATE                                       |
|--------|------|---|--|
| Tues.  | 8/22 | Introduction, overview, logical fallacies; 5 logical criteria.  | Read TR through chapter 2 and look for questionable arguments. |
| Thurs. | 8/24 | Chernobyl movie; Logical analysis of TR.  | Read TR, chapters 3-4 and look for questionable arguments.     |
| Sunday | 8/27 | (Sunday: 6 p.m., pizza and movie on "Downwinders" at home of Dr. Shrader-Frechette, 838 Park Avenue, South Bend |  |
| Tues.  | 8/29 | Quiz 1; Logical analysis of TR; Technology and Ethics   | Read TR, chapters 5-6; Read TV, 1.1-1.3                        |
| Wed.   | 8/30 | LAST DATE FOR ALL CLASS CHANGES   |  |
| Thurs. | 8/31 | Logical Analysis of TR  | Read TR, chapters 7-8; begin to prepare Paper 1                |
| Tues.  | 9/5  | Quiz 2; Heidegger on Technology<br>Pro:_____ Con:_____  | Read 2.1-2.2 in TV; Read TR, chapters 9-10                     |
| Thurs. | 9/7  | Turn in Paper 1; Winner on Technology<br>Pro:_____ Con:_____  | Turn in Paper 1; Read 2.3 in TV; Read TR, chapters 11-12       |
| Tues.  | 9/12 | Quiz 3; Mesthene vs. McDermott<br>Pro Mesthene:_____<br>Pro McDermott:_____<br>Both are wrong:_____             | Read 2.4, 2.5 in TV  |

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| Thurs. | 9/14  | Hollander vs. Tatum<br>Pro H: _____ Pro T: _____<br>Con H: _____ Con T: _____                              | Read 2.6-2.7 in TV.<br>Begin work on Paper 2.   |
| Tues.  | 9/19  | Quiz 4;<br>Autonomous Technology and Rights<br>Pro Winner: _____<br>Con Winner: _____                      | Read 3.1-3.2 in TV  |
| Wed.   | 9/20  | Special Lecture: Rev. Michael<br>McNulty, S.J., "Taking the Victim's<br>Side: The Philosopher as Advocate" | Lecture is required for all students.<br>Lecture takes the place of class on<br>10/12/00. |
| Thurs. | 9/21  | Turn in Paper 2;<br>Technology, Economics, and Rights<br>Pro McGinn: _____<br>Con McGinn: _____            | Turn in Paper 2;<br>Read 3.3-3.4 in TV  |
| Tues.  | 9/26  | Quiz 5;<br>Economic Value Judgments in TA<br>Pro SF: _____<br>Con SF: _____                                | Read TR, ch. 13   |
| Thurs. | 9/28  | Sociological Value Judgments in TA<br>Pro Mayo: _____<br>Con Mayo: _____                                   | Read TV, ch. 3.5  |
| Tues.  | 10/3  | Quiz 6;<br>Engineering and Ethics<br>Pro Mitcham: _____<br>Con Mitcham: _____                              | Read TV, chs. 4.1 and 4.2   |
| Thurs. | 10/5  | Midterm Test   | Study for Test  |
| Tues.  | 10/10 | Quiz 7;<br>Ethics and Automobile Technology<br>Pro DG: _____<br>Con DG: _____                              | Read TV 4.3;<br>Read TR, ch. 14   |
| Thurs. | 10/12 | No class because of movie on<br>8/31/00  |   |

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| Tues.  | 10/17 | FALL BREAK   | Relax                                |
| Thurs. | 10/19 | FALL BREAK   | Relax                                |
| Tues.  | 10/24 | Quiz 8;<br>Ethics and Computer Technology  | Read TV 4.4;<br>Read TR, ch. 15-16   |
| Thurs. | 10/26 | Turn in Paper 3;<br>Analysis of TR, chs. 1-3   | Work on Paper 3                      |
| Fri.   | 10/27 | Last day to drop class   |                                      |
| Tues.  | 10/31 | Quiz 9;<br>Ethics and Military Technology:<br>Pro Parnas: _____<br>Con Parnas: _____ | Read TV 4.5                          |
| Thurs. | 11/2  | Ethics and Military Technology:<br>Cohen, Pro: _____<br>Cohen, Con: _____            | Read TR, ch. 17-18.                  |
| Tues.  | 11/7  | Quiz 10;<br>Logical Analysis of Waste Issue<br>Pro SF: _____<br>Con SF: _____        | Read TV, ch. 4.6                     |
| Thurs. | 11/9  | Logical Analysis of Waste Issue  | "                                    |
| Tues.  | 11/14 | Quiz 11;<br>Logical Analysis of Pesticide Issue                                      | Read TV, ch. 4.7                     |
| Thurs. | 11/16 | Human Genome Technology and<br>Ethics<br>Pro Murray: _____<br>Con Murray: _____      | Read TV, ch. 4.8;<br>Read TR, ch. 19 |
| Tues.  | 11/21 | No class because of<br>afternoon/evening lecture on 9/20/00                          |                                      |

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| Thurs. | 11/23 | Thanksgiving  | Relax                                |
| Tues.  | 11/28 | Quiz 12;<br>Biotechnology and Agriculture<br>Pro Westra: _____<br>Con Westra: _____ | Read TV, ch. 4.9;<br>Read TR, ch. 20 |
| Thurs. | 11/30 | Duties of Technological Citizens  | Catch up; review                     |
| Tues.  | 12/5  | Last Class: Review Session  | Review                               |

Final Exam