NO 363 - ENGINEERING ETHICS
Fall 1999

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WADC 310 Ph: 487-3350

Office Hours: M 2-5 or by appointment

Syllabus

Sept. 13
Introduction
H 1-14, 389-402, Case 1.1

20
Professionalism & Codes of Ethics
H 5-41, J 130-36, Case 2.1

27
Responsibility & Engineering
H 55-76, Cases 3.1, 3.2
J 15-25, 210-18

Oct. 4
Honesty
H 95-118, J 376-85
Case 4.1

Moral Thinking
J 248-60

The Role in Protecting
Scientific and Technical Disasters

11
Moral Problem-Solving
H 125-44, 155-61, 163-74
Cases 5.2, 6.2, 6.7
(on reserve, but virtually accessible; see below)

18
Honesty, Truthfulness & Reliability
H 187-213, Cases 7.1, 7.2

Engineers as Employees:
Legal Issues

Relations with Management

PR: "The Fifty-Nine Story Crisis" (on reserve)
(Citycorp Center design flaw)

PR: Goodrich Aircraft Brake Scandal

25
Engineers as Employees:
Loyalty and Whistle-Blowing
H 286-99, Case 9.1
J 241-47, 263-78

PR: The Challenger

PR: Bay Area Rapid Transit (control system defect)

Risk, Safety and Liability

PR: Kansas City Mallway Collapse

PR: On Side-Saddle Oke Tanks

PR: Ford Pinto

18
Engineering and the Environment
H 315-45, Case 10.1

PR: Three Mile Island

PR: Millstone Nuclear Plant

ARE Dixon

Case Files

This syllabus is subject to revision to better meet the instructional needs of the class.

NOTE: If anyone requires accommodations under the Americans With Disability Act, please see me as soon as possible so that I can address the situation.

Required Tests and Readings

H = "Engineering Ethics" by Harris, Pritchard & Rabine
J = "Philosophical Issues in Engineering" by Johnson

"The Fifty-Nine Story Crisis" is on reserve.
"The Corporate Apology" by Art Wolfe in Business Horizons 33:2 (1990), pp. 10-15

This is on reserve, but to access it virtually, go to our library's Indexes & Databases, then to InfoTech Search Bank, then to Gen'l Ref. Ctr. Gold, then type in "The Corporate Apology".

Copy the above articles and bring with you to class.

Course Requirements

Attendance

Students are expected to attend all classes. Two absences will lower your grade. Three absences or more will constitute grounds for failure of the course. If your situation merits special consideration, you should discuss this with me.

The 'being there' mark (10%)

The 'being there' mark is a reflection of your physical, mental and verbal presence in the course. Regular attendance, the quality and frequency of participation in discussion, as well as other modest indicators (such as staying awake, bringing and doing required readings, coming prepared with questions for discussion, etc.) are all taken into consideration here.

Regular participation in full class and small-group discussion is encouraged and expected. PLEASE NOTE: You cannot actively participate without appropriate materials. i.e. texts, readings, in-class assignments. These are to be brought with you to each class meeting. Failure to do so will lower your grade.

Class Files (45%)

A class file will be submitted at the last class meeting. It will contain all the written work you have done in the course. In addition to your test, this will include your written homework assignments, in-class entries, recorder notes as well as any out-of-class discussion entries you would like to include. Class notes should NOT be placed in the class file. Class file grades will be based primarily on (1) your written homework assignments and in-class entries (these are required), and (2) any recorder notes and out-of-class discussion entries (these are optional).

You will need to complete 6 out of 8 written homework assignments. (Plan ahead so you do not have to do an assignment on the day you are giving your presentation.) These are to be from 1000-1200 words in length. (Please single-space and use 10 pt. type.) Their purpose is to ensure that you have read the readings thoughtfully and carefully before we deal with them in class, and that you are prepared to engage in well-informed, reasoned discussion of them. The nature of the written assignment may vary, but typically you will be asked to do one or more of the following: 1) provide an exposition; in which you present clearly the central concepts and arguments advanced in the readings; 2) provide a critical evaluation, in which you do some of the following: assess the merits of the arguments in the readings, indicating your reasons for agreeing or disagreeing; raise questions concerning the material; suggest further avenues of inquiry; develop and defend your own position, anticipating possible objections and responding to them, etc; 3) prepare a response statement to the readings, in which you synthesize the main points and comment upon them, or 4) provide a position paper, responding to one or more points for discussion. The letter may take various forms. Usually a PFP will be presented as a carefully formulated question, or possibly a quotation from the readings, to which you then respond. The material addressed
should be something that you found particularly interesting, provocative, objectionable, correct, etc., and which you believe merits further reflection by you and the class as a whole. After presenting your PPD, you then initiate your own brief discussion of it. Sometimes you will be asked to create your own PPDs; sometimes these will be assigned.

NB: Late assignments WILL NOT be accepted. A late assignment is a missed assignment.

In-class entries will also be made on a regular basis, and will often require reference to the readings. This is another reason you will need to have your text/readings with you. Brief homework assignments may also be made from time to time. As with all your written work, these should be made on loose-leaf (8½” × 11”) notepaper. PLEASE DO NOT USE SHARPIE. NOTEBOOK FOR ANYTHING YOU HAND IN.

You are urged, but not required, to make unassigned out-of-class discussion entries as well. These will not substitute for any of the required entries, but you can use them to further explore anything which particularly interests you that is relevant to the course. You might, for example, note your response to a class discussion, mentioning the provoked in your own views and/or qualifications in your own views and/or

NB: Late assignments WILL NOT be accepted. A late assignment is a missed assignment.

You're capable of better work. Demand more of yourself.

Bring this up in class.

I'd like to talk to you about this.

Put the material in your own words in your exposition of the reading.

Your writing is unclear, due to poor sentence structure, grammar, etc.

Don't rely on your spell-checker to do your proof-reading. It doesn't catch everyting.

You need to spend more time and thought developing your position/arguments.

Please separate and label the separate parts of the assignment.

See me if you have any questions.

To improve, try to develop your discussion/arguments further.

I'm not quite following you hear. Can you make your point more clearly?

This is unclear. It is difficult to determine exactly what you mean.

This is not a valid argument, or this remark does not follow from your other statements.

This is factually false.

No, this is a misinterpretation of the argument, position or thesis.

These indicated passages are contradictory, inconsistent, or in tension.

You are begging the question, i.e. assuming what you claim to prove.

You have not really answered the question.

This is basically irrelevant to your discussion. Your space is limited; use it effectively.

This is redundant.

This claim should have been given some supporting argumentation.

Incorrectly presented.

Your discussion is not well-organized.

An interesting point. Can you expand on it?

A more thoughtful discussion is needed.

Engage the material. DIVE into the issues. Don't just paddle around on the surface.

A Key to Comments on Written Assignments

Comments frequently made on written assignments are abbreviated below. If you would like to discuss your work in more detail, please come by during office hours.

1) Excellent exposition.
2) Excellent critical evaluation.
3) Critical evaluation needs development.
4) Exposition needs development.
5) Good work, but you can do even better.
6) Competent, but don't settle for that.
7) Impressive/First-rate.
8) Token/Disappointing.
9) You're capable of better work. Demand more of yourself.
10) Bring this up in class.
11) I'd like to talk to you about this.
12) Put the material in your own words in your exposition of the reading.
13) Your writing is unclear, due to poor sentence structure, grammar, etc.
14) Don't rely on your spell-checker to do your proof-reading. It doesn't catch everything.
15) You need to spend more time and thought developing your position/arguments.
16) Please separate and label the separate parts of the assignment.
17) See me if you have any questions.
18) To improve, try to develop your discussion/arguments further.
19) I'm not quite following you hear. Can you make your point more clearly?
20) This is unclear. It is difficult to determine exactly what you mean.
21) This is not a valid argument, or this remark does not follow from your other statements.
22) This is factually false.
23) No, this is a misinterpretation of the argument, position or thesis.
24) These indicated passages are contradictory, inconsistent, or in tension.
25) You are begging the question, i.e. assuming what you claim to prove.
26) You have not really answered the question.
27) This is basically irrelevant to your discussion. Your space is limited; use it effectively.
28) This is redundant.
29) This claim should have been given some supporting argumentation.
30) Incorrectly presented.
31) Your discussion is not well-organized.
32) An interesting point. Can you expand on it?
33) A more thoughtful discussion is needed.
34) Engage the material. DIVE into the issues. Don't just paddle around on the surface.

Some Critical Reasoning Goals

In your work, you should consciously attempt to cultivate the following critical reasoning skills:

1) To identify and critically evaluate the arguments of others, as well as to construct and defend your own arguments.
2) To uncover and question implicit assumptions and preconceptions in written and spoken discourse.
3) To draw legitimate and appropriate inferences from the claims of others and to realize the implications of your own claims and beliefs.
4) To introduce relevant distinctions and qualifications in the interests of achieving consistency, precision and clarity of thought and expression.
5) To secure for yourselves autonomy of thought by challenging and testing previously unexamined beliefs and values.

All critical reasoning is a kind of communication. You can't be good at it unless you can communicate with others. This means you need to be able to convey your arguments effectively to an audience. But you must be able to understand and evaluate the arguments of others as well. Good argumentation is largely a matter of being well-organized, making valid points, and using effective language.