ENGR/PHIL 482  
Review for Final Exam, Fall 2003

Note: We do not guarantee that every concept covered on the final exam will be mentioned in this review, which was prepared before the final exam was completed. However, if you know these ideas, you should do very well indeed on the final. We recommend that you review the textbook, the maroon book of notes and the lecture notes on Dr. James’ web site as well.

1. Review the ethical methodology material from the earlier part of the course. This includes factual, conceptual, application and moral issues. Also: creative middle ways and line drawing.

2. Review the lectures in the second half of the course. This includes the lecture by Mr. David Brewer on ethics in a small engineering firm, Dr. Holtzapple’s two lectures on engineering and the environment, , the two Bovay lecturers (Mr. Hanzlik and Mr. Carrigan) who spoke of ethical/professional issues facing young engineers, the lecture by Mr. Chandler on race and gender issues in the engineering workplace, and the lecture by the representative of the state engineering registration board. Issues of importance in these lectures would be such ideas as the arguments about global warming and the “old” and “new” ethics from Dr. Holtzapple; the issues having to do with conflict of interest, breach of confidentiality, and competitive bidding from Brewer, Hanzlik and Carrigan; and some guidelines for race, gender, and sexual harassment issues from Mr. Chandler. This review was constructed before the lecture by the representative from the state board was given, but there may well be a question or two from this important lecture.

3. Risk. The different approaches to risk by the risk experts (utilitarian), the public (generally more RP), and the government regulator (especially oriented towards preventing harm—i.e. preventing false negatives). Concepts of normalizing deviance and “normal” accidents (tight coupling and complex interaction). Additional ideas from the lectures of Drs. James or Heffington.


5. Environmental ethics. Additional ideas not covered (or only briefly covered) in Dr. Holtzapple’s lectures, such as the anthropocentric/non-anthropocentric distinction, various criteria for a “clean” environment (including the one recommended by the text, which is different from the one favored by Dr. Holtzapple), the distinction between health-related and non-health-related environmental concerns, and the “modest proposal” for engineering responsibilities related to the environment.

6. International engineering professionalism. See the lecture notes and the new chapter in the maroon book of notes. These supercede the chapter in the book, although there is a great deal of similarity, and much of the material is identical. The most important problem is that of going to
another culture where the values and traditions are different. A balance between laxism and rigor and relativism and absolutism is recommended. You should know something about the nine CT Norms and the issues that come up in applying them. Remember that they are not intended to be applied rigidly; they are guides. Know the distinction between bribes, extortion, gifts and grease payments and some of the guidelines for dealing with them.


8. Computer ethics. Some arguments for and against protecting privacy with respect to computer databanks. Some elements of a possible creative-middle-way solution to the privacy issue. Patents and copyrights as protection of computer software, and the utilitarian and RP arguments for and against legal protection of software. Computer abuse and how to classify the moral seriousness of various cases involving computer abuse. The Therac-25 case and the two ways of avoiding moral responsibility that the case illustrates: pushing responsibility up to the corporate level and then arguing that corporations cannot be morally responsible agents, or pointing out that many people are responsible and then arguing that no one person can be held morally responsible to any significant degree. Arguments on how these two attempts to evade moral responsibility can be rejected. Proposals for maintaining responsibility in a computerized society: instituting clearer standards of care and imposing strict liability in some areas. Criticisms of these proposals.

9. Promoting and enforcing ethics. Distinction between those organizations that can best promote ethics (professional societies and the accreditation agency for engineering schools—ABET) and those that can enforce ethics by law (the state boards of registration, which are all members of the National Council of Examiners for Engineering and Surveying). The problems professional societies have had in investigating unethical members and revoking their membership (Mardirosian case. The concept of an “umbrella society,” which would include engineers from all branches of engineering, so that engineering would have something equivalent to the American Medical Association or the American Bar Association. The NSPE is the nearest to such an organization. Know something about the NSPE’s Board of Ethical Review and its functions. The issue of universal licensure and the industry exemption.