

Engineering & Society Syllabus

See also: [Accident Summary and Analysis](#) | [Case Study Presentation](#)

ETec 341 Engineering and Society

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Course Objectives: By exploring links between the engineering profession and society, students will develop a clearer understanding of what it means to be a responsible and ethical professional in a technical field. Students will also further develop their communication skills, learning to present technical material and document their sources for multiple audiences. Since this course is a Writing Proficiency (WP) course, students will write informal responses to readings and presentations and will write formal instructions, proposals, summaries and abstracts. In addition, students will practice their speaking and listening communication skills through informal discussion, extemporaneous speaking, formal presentations, and peer responses.

Texts:

Schinzinger and Martin, *Introduction to Engineering Ethics*, McGraw Hill, 2000
Finkelstein, *Pocket Book of Technical Writing for Engineers and Scientists*, 2nd Ed., McGraw Hill, 2005

Internet Resources:

<http://onlineethics.org/>

<http://www.nspe.org/Ethics/CodeofEthics/index.html>

<http://www.writing.engr.psu.edu/>

Assignments:

Weekly Writing Exercises:	10%	
In-class Discussion Participation:	5%	
Ethics Presentation and Summary:	15%	Due 2/8 through 2/24.
Instructions Guide:	25%	Draft due 1/25. Final due 2/8.
Action Memo:	5%	Due 2/1.
Abstract:	5%	Draft due 3/1. Final due 3/10.
Informal Proposal:	25%	Draft due 2/22. Final due 3/10.
Proposal Presentation:	10%	Due 3/3, 3/8 or 3/10.

Course Information:

Ethics: In this course, we will examine the broad topic of "Ethics in Engineering Practice." In the field of Engineering Technology, professionals face not only practical questions of design and implementation, but also – more than ever – ethical questions about the impact of technology on the community. Technology touches just about everything we do. It enables us to ease, improve, save, destroy, or even create human life. Using technology, humans can design solutions to previously insurmountable problems, or they can initiate even greater problems in our society. For that reason, all potential professionals must examine their own understanding of human values and develop a framework both for clarifying confusing information and for making ethical decisions about the problems they will encounter in the workplace.

For example, suppose a solution to a problem is just the lesser of two evils? How do we choose? How do we estimate the mix of risk and benefit? What are our social values and cultural habits? Are there differences between our personal values and professional ethics? How do we evaluate factual evidence, understand legal complications, satisfy our employers as well as our conscience, decide whether to stand silent or act?

To help answer these questions, we will explore a framework for thinking about ethics, and we will examine various case studies to consider ethical issues in engineering and to explore the relationship between technology and society.

Communication: Since writing effectively is a skill vital to professional success, students will have regular writing exercises (tailored to the needs of the class) and three formal writing assignments: an instruction guide, a research proposal, and an abstract for the proposal. This course is a Writing Proficiency (WP) course, which means that students must submit drafts of formal assignments at specific times ahead of the final due date so that we can provide constructive suggestions for revision. (Although drafts will receive comments instead of grades, they must be turned in – on time – in order to receive credit on the final paper.) Final grades will be based on revised papers.

Students will also develop their oral communication, another vital skill in the workplace. We will have open discussions in class, extemporaneous speaking on selected topics, and two formal presentations: one on an ethics topic, and one on your proposal.

We will not always agree in our discussions, but we will learn how to identify our differences and how to disagree in a civil, constructive process that leads toward solutions rather than further problems. More than ever before, your ability to communicate constructively with your colleagues will determine the success of your career. Effective communication will be the best tool in your technical toolbox.

Attendance: Since you cannot practice these skills in a vacuum, regular attendance is essential. If you anticipate missing more than three class sessions, you must understand that excessive absences will have an adverse effect on your course grade.

Course Outline:

Week 1: T 1/4: Course Introduction and Definitions – *Read Finkelstein, Chps.2 and 3 (pp. 11-37) and 13 (pp. 229-246)*

R 1/6: Engineering as a Profession – *Read Schinzinger and Martin Chp. 1 (pp. 1-37)*

Week 2: T 1/11: Descriptions, Mechanism and Process – *Read Finkelstein Chps. 4 and 5 (pp. 39-70)*

R 1/13: Ethical Theories – *Read Schinzinger and Martin Chp. 2 (pp. 39-70)*

Instructions Topics Due

Week 3: T 1/18: Instructions and Visuals – *Read Finkelstein Chps. 10 (pp. 167-190) and 15 (pp. 261-277)*

R 1/20: Engineering as Social Experimentation – *Read Schinzinger and Martin Chp. 3+ (pp. 71-105, 137-140)*

Week 4: T 1/25: Presentations and Summaries – *Read Finkelstein Chp. 17 (pp. 297-314)*

Instructions First Draft Due

R 1/27: Commitment to Safety – *Read Schinzinger and Martin Chp. 4- (pp. 107-137, 140-142)*

Week 5: T 2/1: Proposals and Documentation – *Read Finkelstein Chps. 6 (pp. 83-109) and 14 (pp. 247-260)*

Proposal Action Memo Due

R 2/3: Global Issues – *Read Schinzinger and Martin Chp. 6 (pp. 185-222)*

Week 6: T 2/8: Ethics Presentations (TBA) and writing conferences/exercises

Instructions Final Draft Due

R 2/10: Ethics Presentations (TBA) and writing conferences/exercises

Week 7: T 2/15: Ethics Presentations (TBA) and writing conferences/exercises

R 2/17: Ethics Presentations (TBA) and writing conferences/exercises

Week 8: T 2/22: Ethics Presentations (TBA) and Abstracts (*Read Finkelstein Chp. 12 (211-217)*)

Proposal First Draft Due

R 2/24: Ethics Presentations (TBA) and writing conferences/exercises

Week 9: T 3/1: Workplace Rights and Responsibilities – *Read Schinzinger and Martin Chp. 5 (pp. 143-183)*

Proposal Abstract Draft Due

R 3/3: Proposal Presentations and writing exercises

Week 10: T 3/8: Proposal Presentations

R 3/10: Proposal Presentations

Final Proposal and Abstract Due