

ESE301: Engineering Ethics and Societal Impact
Fall 2017

2017 Catalog Description:

The study of ethical issues facing engineers and engineering related organizations and the societal impact of technology. Decisions involving moral conduct, character, ideals and relationships of people and organizations involved in technology. The interaction of engineers, their technology, the society and the environment is examined using case studies. Introduction to patents and patent infringement using case studies.

Course Designation: Required Course

Text Book: Engineering Ethics: Fifth Edition, Charles B. Fleddermann

Prerequisite(s): D.E.C. category E course or SNW course

Credit Hours: 3

Coordinator: Donna L. Tumminello

Goals: To provide students with an understanding of engineering ethics and the impact of engineering on society through student discussions, writing and case studies.

Course Learning Outcomes: Upon completion of the course, students will have

- Knowledge of ethical decisions confronting individuals and organizations in engineering and science.
- Awareness of moral conduct, character, ideals, and relationships of people and organizations involved in technical development.
- Awareness of the societal impact of technology including practical knowledge relating to patent/copyright/trademark/confidentiality and infringement
- How engineers can play a role in societal issues involving technology that have gray areas.

Topics Covered:

Week 1.	Professionalism and Codes of Ethics
Week 2.	Understanding Ethical Problems

Week 3.	Ethical Problem Solving Techniques
Week 4.	Risk, Safety, and Accidents
Week 5.	The Rights and Responsibilities of Engineers
Week 6.	Ethical Issues in Engineering Practice – Midterm Case Analysis Due
Week 7.	Intellectual Property Patents
Week 8.	Intellectual Property Trademarks/Copyrights
Week 9.	Intellectual Property Law – Ownership/Enforcement
Week 10.	Intellectual Property Law – Licensing/Antitrust/Export Controls
Week 11.	Intellectual Property Infringement
Week 12.	Project Management - Teamwork
Week 13.	Project Management – Leadership Skills
Week 14.	Project Management – Final Case Analysis Due

Class/laboratory Schedule: 3.0 lecture hours per week

Student Outcomes

**%
contribution***

On the following "3 a-k" list, please check those topics which are covered within the course:

- | | |
|----------------------------------------------------------------------------------------------|----|
| <input type="checkbox"/> (a) ability to apply knowledge of math, engineering, and science | |
| <input type="checkbox"/> (b1) ability to design and conduct experiments | |
| <input type="checkbox"/> (b2) ability to analyze and interpret data | |
| <input type="checkbox"/> (c) ability to design system, component or process to meet needs | |
| <input type="checkbox"/> (d) ability to function on multi-disciplinary teams | |
| <input type="checkbox"/> (e) ability to identify, formulate, and solve engineering problems | |
| X (f) understanding of professional and ethical responsibility | 60 |
| X (g) ability to communicate effectively | 20 |
| X (h) broad education | 5 |
| <input type="checkbox"/> (i) recognition of need an ability to engage in life-long learning | |
| X (j) knowledge of contemporary issues | 10 |
| X (k) ability to use techniques, skills, and tools in engineering practice | 5 |
| <input type="checkbox"/> (l) an ability to communicate and/or collaborate effectively online | |

* Assume that the total contribution of any course will be 100%. Use the right hand column to indicate the approximate percent that the left hand columns contribute to the overall course.

Document Prepared by: Donna Tumminello

Date: May, 2017