Engineering Ethics and Societal Impact
ESE 301

State University of New York at Stony Brook
Spring 2019

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Office Hours: Monday and Friday 12:00 PM – 1:00 PM

Course Prerequisite: U3 or U4 standing

There are three forms of participation required:

- On-line and traditional lecture
- Class projects/activities as assigned
- Mid-term / Final reports and presentations

Course Readings: Engineering Ethics: Fourth Edition or later, Charles B. Fleddermann

Lecture Time: Tuesday and Thursday 8:30 AM – 9:50 AM

Location: STALLER CENTER M0113 West Campus

Course Description:

The study of ethical decisions confronting individuals and organizations in engineering and science. Related questions about moral conduct, character, ideals, and relationships of people and organizations involved in technical development are discussed. Ethics codes for engineers, computer scientists, and natural scientists are covered. Includes topics in law such as negotiation, antitrust, misappropriation, espionage, electronic communication privacy, computer fraud and abuse, reverse engineering, ownership and enforcement of patents and trademarks, and export controls.

Course Objectives:
Students will develop an awareness of ethical challenges they will face during their careers and will be prepared to respond appropriately using moral decision making processes. Exposure to intellectual property law and valuation of intellectual property rights.

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:	
❑ (a) ability to apply knowledge of math, engineering, and science	
❑ (b1) ability to design and conduct experiments	
❑ (b2) ability to analyze and interpret data	
❑ (c) ability to design system, component or process to meet needs	
❑ (d) ability to function on multi-disciplinary teams	
❑ (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
❑ (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
❑ (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.

Course Assessment:

Class participation, 20%
Mid-term report & presentation, 40%
Final report & presentation, 40%

NOTE:

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact Disability Support Services at (631) 632-6748 or http://studentaffairs.stonybrook.edu/dss/. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to the following website: http://www.sunysb.edu/ehs/fire/disabilities.shtml