

ECE 7080 (Proposed): Ethics and Professionalism

Course Description

Professionalism standards, ethical dilemmas, codes of ethics, moral frameworks and social justice, engineering as social experimentation, safety and risk, workplace rights and responsibilities, professional communications, research integrity, environmental ethics, global issues. Case study based approach.

Transcript Abbreviation: Ethics

Grading Plan: Satisfactory/Unsatisfactory

Course Deliveries: Classroom

Course Levels: Graduate

Student Ranks: Masters, Doctoral

Course Offerings: Autumn

Flex Scheduled Course: Never

Course Frequency: Every Year

Course Length: 14 Week

Credits: 1.0

Repeatable: No

Time Distribution: 1.0 hr Lec

Expected out-of-class hours per week: 2.0

Graded Component: Lecture

Credit by Examination: No

Admission Condition: No

Off Campus: Never

Campus Locations: Columbus

Prerequisites and Co-requisites: Prereq: Grad standing in ECE.

Exclusions:

Cross-Listings:

Course Rationale: Existing course.

The course is required for this unit's degrees, majors, and/or minors: Yes

The course is a GEC: No

The course is an elective (for this or other units) or is a service course for other units: No

Subject/CIP Code: 14.1001

Subsidy Level: Doctoral Course

Programs

Abbreviation	Description
CpE	Computer Engineering
EE	Electrical Engineering

Course Goals

To use a case study based approach to study professionalism, ethics, social justice, and research integrity in engineering

Course Topics

Topic	Lec	Rec	Lab	Cli	IS	Sem	FE	Wor
Engineering as a profession, Professional expectations of graduate students and strategies for success	2.0							
Ethical decision-making strategies, Critique codes of ethics	1.0							
Moral frameworks, connections to engineering, social justice principles	1.0							
Engineering as Social Experimentation	1.0							
Safety and Risk	1.0							
Case Studies for the Design Process	1.0							
Engineer's Responsibilities and Rights	1.0							
Case studies on professional behavior/policies on the job (e.g., on gender issues)	1.0							
Academic misconduct (students and instructors)	1.0							
Research Integrity and Publication Ethics	2.0							
Professional Communications	1.0							
Environmental Ethics	1.0							
Global Issues	1.0							
Cautious Optimism and Moral Leadership	1.0							

Representative Assignments

5 homework assignments, analyzing ethics cases
Final project, on a major ethical dilemma or policy development

Grades

Aspect	Percent
5 homeworks	70%
Final project	30%

Representative Textbooks and Other Course Materials

Title	Author
<i>Ethics in Engineering</i>	Martin and Shinzinger

ABET-EAC Criterion 3 Outcomes

Course Contribution	College Outcome
	a An ability to apply knowledge of mathematics, science, and engineering.
	b An ability to design and conduct experiments, as well as to analyze and interpret data.
	c An ability to design a system, component, or process to meet desired needs.
	d An ability to function on multi-disciplinary teams.
	e An ability to identify, formulate, and solve engineering problems.
***	f An understanding of professional and ethical responsibility.
*	g An ability to communicate effectively.
***	h The broad education necessary to understand the impact of engineering solutions in a global and societal context.

Course Contribution		College Outcome
	i	A recognition of the need for, and an ability to engage in life-long learning.
	j	A knowledge of contemporary issues.
	k	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Additional Notes or Comments

Added "social justice" to description. Changed semester of offering to AU. 2/4/15. ced.

edited text info, 5/10/17, CED

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