

ECE 3080: Ethics and Professionalism

Course Description

Professional responsibilities; IEEE code of ethics; social justice; engineering as social experimentation; safety and risk; professional issues in organizations; case studies; global awareness.

Prior Course Number: 481

Transcript Abbreviation: Ethics & Profsnlsm

Grading Plan: Satisfactory/Unsatisfactory

Course Deliveries: Classroom

Course Levels: Undergrad

Student Ranks: Junior, Senior

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: Jr or Sr standing, and enrollment in ECE major.

Exclusions: Not open to students with credit for 481.

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: Baccalaureate Course

Programs

Abbreviation	Description
CpE	Computer Engineering
EE	Electrical Engineering

Course Goals

Understand what it means to be a professional
Understand engineering codes of ethics
Understand moral frameworks for engineering ethics and social justice principles
Understand engineering as social experimentation
Understand safety, risk and associated ethical issues

Understand workplace issues (conflict of interest, discrimination)
Understand engineering ethics for the environment
Understand global issues (technology transfer, computer ethics, weapons development)

Course Topics

Topic	Lec	Rec	Lab	Cli	IS	Sem	FE	Wor
Understand what it means to be a professional, social justice, codes of ethics, ethical decision making process	4.0							
Engineering as social experimentation, case studies	2.0							
Safety and risk, case studies in ethical issues in design	3.0							
Professional issues in organizations, case studies	3.0							
Global issues, social justice	2.0							

Representative Assignments

Homework problems are assigned from the textbook
A final project is assigned

Grades

Aspect	Percent
To receive an S the students must satisfactorily complete all homework and the final project and miss no more than one class.	100%

Representative Textbooks and Other Course Materials

Title	Author
<i>Ethics in Engineering</i>	Martin & 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.
	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.

CpE ABET-EAC Criterion 9 Program Criteria Outcomes

Course Contribution		Program Outcome
	1	an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
	2	an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
	3	an ability to communicate effectively with a range of audiences
***	4	an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
	5	an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
	6	an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
***	7	an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

EE ABET-EAC Criterion 9 Program Criteria Outcomes

Course Contribution		Program Outcome
	1	an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
	2	an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
	3	an ability to communicate effectively with a range of audiences
***	4	an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
	5	an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
	6	an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
***	7	an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Additional Notes or Comments

Updated abbreviation, prereqs, and exclusion to be consistent with university.

Catalog description and topics list updated by KP 03/2014 as part of review for ABET.
Prerequisites, goals, outcomes updated after USC review - gjv 7/3/2014.

Added "social justice" to course description 11/18/14 BLA

updated text info, 5/10/17, CED

Prepared by: George Valco