

Course number and name:

EL 4334 – Engineering Ethics and Professionalism

Course Description: This course is designed to introduce undergraduate engineering students to the concepts, theory and practice of engineering ethics. It will allow students to explore the relationship between ethics and engineering and apply classical moral theory and decision making to engineering issues encountered in academic and professional careers.

Our society places a great deal of responsibility on professionalism and requires that engineers practice according to a code of ethics. Students will study real world case studies that help them to become informed of issues, roles and responsibilities of engineering professionals.

Course Credit: 3 SCH**Contact Hours:** 3 Lecture**Prerequisites:** EL 3302, MATH 2313, or departmental approval**Cross/Co-listed with:** N/A**Co-requisites:** N/A**Instructor/Course Coordinator:** Roger Gonzalez**Textbook(s) & required materials:**

- Starrett, S., Laray, A.L., and Bertha, C. (2017). Engineering Ethics: Real World Case Studies.
- Resources from the Murgough Center for Engineering Professionalism: [Gilbane Gold](#) © 1989, [Incident at Morales](#) ©2003 (produced with major support from the National Science Foundation), and [Henry's Daughters](#) © 2010.
- Other NIEE activities include sponsoring, developing, and implementing engineering ethics workshops, seminars, and symposia.

Course Learning Outcomes:

Engineering Leadership students will learn:

1. An understanding of their duties and responsibilities as professionals through gaining knowledge of the philosophies of ethics, professional practice, and world culture.
2. Basic knowledge of the canons of engineering.
3. Improved awareness of potential ethical issues within an engineering context
4. Team skills through working in teams on assignments and in-class assignments
5. The value of leadership principles in professionally managing 1. through 4.
6. Know some of the classic cases as well as contemporary issues in engineering ethics.
7. An understanding of how societal morals varies with culture and how this influences ethical thought and action.
8. Improved communications skills with regard to ethical and professional issues in engineering.

Contribution to professional component: Leadership and management, professional communication.

Relationship to Program Outcomes:

- An ability to recognize ethical and professional responsibilities in engineering situations and to make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.

<ul style="list-style-type: none"> 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. 	
Grading Scheme:	<p>A: 90-100 B: 80-90 C: 70-80 D: 60-70 F: <60</p> <p>Progress Presentations & Participation: 20%</p> <p>Homework: 30%</p> <p>Major Team Project: 20%</p> <p>Mid-Term & Final Exam: 30% (15% each)</p>
Sample Topics:	
<p>Engineering practice, Engineering professions, Engineering canons, Engineering ethics, Case studies in engineering ethics, Engineers and society, Engineers and culture.</p>	