



## GE 302 Professional Ethics in Engineering

**Code and Name:** GE 302 Professional Ethics in Engineering

**Credit Hours:** 2 (Lecture: 2, Tutorial: 0)

**Textbook:**

- Engineering Ethics, Charles B. Fleddermann, 4<sup>th</sup> Edition, Pearson, 2012

**Other References:**

- Principles of ethics in Islam (Quran and Sunnah)
- Arabic written literature (Islamic ethics )
- Professional societies, code of ethics and conducts

**Course Description:**

Introduction to engineering ethics; definition of a profession, personal and professional ethics, explore many of the ethical issues, discussion of ethical theories, code of ethics, problem solving techniques. Introduce engineer's rights and responsibilities. Assess Safety, risk and accidents. Explain the Rights and Responsibilities of Engineers.

**Pre-requisites:** None

**Co-requisites:** None

**Course Learning Outcomes:**

With relation to ABET Student Outcomes (SOs: 1-7)

1. Define profession and professional societies (4)
2. Write a code of ethics and know how to apply them (4)
3. Judge and evaluate different engineering ethical cases (4)
4. Use problem solving techniques such as line drawing and flowcharting to ethical cases (4)
5. Recognize ethical conflicts in the work environment (4)
6. Explain the Rights and Responsibilities of Engineers (4)

**Topics to be covered:**

- Introduction: Background Ideas - Why Study Engineering Ethics? - Engineering Is Managing the Unknown - Personal vs. Professional Ethics
- The Origins of Ethical Thought - Ethics and the Law - Ethics Problems Are Like Design Problems -
- Case Studies
- Professionalism and Codes of Ethics - Is Engineering a Profession? - Code of ethics
- Understanding Ethical Problems - A Brief History of Ethical Thought - Ethical Theories - Non-Western Ethical Thinking
- Ethical Problem-Solving Techniques Introduction: Line drawing - Flow charting - Conflict of interest - Analysis of Issues in Ethical Problems
- Risk, Safety, and Accidents Introduction - Safety and Risk – Accidents
- The Rights and Responsibilities of Engineers Introduction - Professional Responsibilities
- Professional Rights - Whistle-Blowing - Ethical issues in engineering practices

**Grading Policy:**

The grading for the course are 60% coursework and 40% Final Exam. The course work consists of two Midterm Exams, where each midterm exam is worth 20%. It also includes quizzes, homework, and projects for the remaining 20% that is modified by the course instructor.

