

Master Course Description for EE-398 (ABET sheet)

Title: Introduction to Professional Issues

Credits: 1

[UW Course Catalog Description](#)

Coordinator: Blake Hannaford, Professor, Electrical and Computer Engineering

Goals: To discuss some of the many issues beyond those covered in our technical courses that a newly-minted engineering professional needs to know to succeed and contribute to the best of their ability.

Learning Objectives: At the end of this course, students will be able to:

1. *Describe* the advantages and disadvantages of acquiring an advanced degree in the context of their own professional plans.
2. *Reflect* on their own future career path.
3. *Describe* the characteristics of a professional.
4. *Appreciate* the importance and legal limitations of the IEEE Code of Ethics.
5. *Understand* the complexity of ethical responsibilities and conflicts that can occur as an employee of a corporation.
6. *Understand* the benefits of diversity, equity, and inclusion as it pertains to UW Electrical & Computer Engineering.
7. *Recognize* challenges faced by people who are underrepresented in STEM.
8. *Begin* their own personal networking journey.

Textbook: None

Reference Texts: None

Prerequisites by Topic: None

Topics:

1. Diversity, equity, and inclusion in ECE and STEM (2 wks)
2. The UW College of Engineering Career Center @ Engineering (1 wk)
3. Career paths in ECE (3-4 wks)
4. Attending graduate school (MS or PhD) in ECE (1 wk)

5. Societal expectations of a professional engineer; the IEEE Code of Ethics. (1 wk)
6. The corporate enterprise; corporate organization. (1 wk)
7. Responsibilities of engineers in ethical dilemmas: personal ethics, conflicts of interest. (1 wk)

Course Structure: The class meets for one hour each week for discussion of selected topics. A variety of reading assignments and videos will amplify the issues under discussion, and short reflection essays and/or web research will be assigned some weeks. A final paper describing an ethical dilemma will be assigned in lieu of a final exam.

Computer Resources: Students will respond to class assignments on a Canvas site.

Laboratory Resources: None

Outcome Coverage:

(1) *An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.* (L) It is expected that students will be able to apply their engineering knowledge to discussion of engineering ethics.

(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.* (M) We will discuss professional ethics in general, the IEEE Code of Ethics in particular, and provide case studies of real and hypothetical examples of engineering ethics.

(3) *An ability to communicate effectively with a range of audiences.* (L) The importance of being able to explain engineering analysis to non-experts -- e.g. Environmental Impact Statements, FCC regulations -- will be discussed briefly.

(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.* (H) We will discuss professional ethics in general, the IEEE Code of Ethics in particular, and provide case studies of real and hypothetical examples engineering ethics. Note also the discussion of the role of whistleblowers.

(6) *An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.* (L) The

application of engineering judgment will be lightly explored in the context of a discussion of engineering ethics.

(7) An ability to acquire and apply new knowledge as needed, using appropriate learning strategies. **(L)** Students will be asked to find additional examples of engineering ethics cases for discussion.

Prepared By: Eve Riskin

Date: 20 April 2022