Electrical and Computer Engineering Professionalism ECE 3810

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Course Description

This course, in conjunction with the technical writing classes (ENGL 3080), introduces you to a set of less traditional skills that, when mastered, will help you in your professional career. We will be covering systems engineering, engineering ethics, societal topics affecting engineering, and the importance of lifelong learning. We will discuss preparation for graduate school.

The course provides instruction in several areas that will be important to you as a working engineer. Topics covered include:

1. Systems Engineering

    (a) Systems and the Engineering Profession
    (b) Entrepreneurship and Ideas
    (c) Design/Planning of Projects
    (d) Project Management

2. Lifelong Learning

    (a) Staying Current and Fundamentally Sound in Your Field
    (b) Expanding into Other Fields
    (c) Preparing for Graduate School

3. Ethical and Contemporary Issues in Engineering and Science

    (a) Ethics in Engineering
    (b) Social Issues
    (c) Political Issues
    (d) Scientific Issues

Prerequisites

You must have been admitted to the professional program to take this course.

Textbook

"Better Embedded System Software", Phillip Koopman (ISBN-13 978-0-9844490-0-2)

References

Readings will be posted on Canvas as needed.

Course Objectives

Recognizing that working engineers require skills that are different than those acquired in the standard technical curriculum, this course is designed to provide a framework of these skills. Additionally the course points out the necessity of becoming a self or lifelong learner and addresses contemporary issues faced by today's engineers.

Course Outcomes

At the completion of this course the student will:

1. Be able design/plan projects that would result in a functioning engineering system.

2. Be able to manage a planned project to completion.

3. Understand the need for staying current and fundamentally sound in your field.

4. Understand the need for expanding your knowledge into other fields.

5. Understand ethical concerns as they affect engineers.

6. Be aware of issues (social, political, and scientific) that affect you and your career.

Lecture Structure

The lectures are divided into two parts. The first fifteen minutes will deal with a more 'social' topic such as ethics, life-long learning, etc. The last hour of class will cover a systems engineering topic.

Class Schedule

The class meets once a week on Tuesdays at 12:00 to 1:15PM in ENGR 302.

Assessment and Grading

Assessment methods and grading are as follows:

1. Responses to questions posed during the lecture. The required answers are short (paragraph) responses. You will graded on technical structure (grammar, punctuation, spelling, etc.). You will also be graded on your ability to string together a coherent argument. (this part accounts for 30% of your grade)

2. A team project consisting of a project idea, a system design, and a preliminary design review. (this part accounts for 70% of your grade)