# ECE 40500 - Senior Engineering Design I

## Type of Course

Required for EE and CmpE Programs

## Catalog Description

The first course of a two-semester sequence of senior capstone design. Provides students with experience in the process and practice of electrical/ computer component/system design from concept through final design. Emphasis on teamwork, project management, oral and written communication. General lectures on issues important to the engineering profession, such as professional and ethical responsibility, the impact of engineering solutions in a global and societal context, and other contemporary issues.

## Credits

3

## Prerequisite Courses

Senior Program Standing

## Textbook

None

## Course Objectives

To develop capabilities of students to solve real-life problems.

Students have to apply knowledge from their previous course work to accomplish projects formulation to prototype evaluation.

## Course Outcomes

## Students who successfully complete this course will have demonstrated

1. An ability to formulate a problem statement. (1)
2. An ability to acquire and apply new knowledge to generate solutions (conceptual designs) using brainstorming technique. (7)
3. An ability to develop a detailed design based on pre-testing and evaluating key design alternatives relative to performance measures.(6)
4. An ability to obtain a final design including safety, economic, ethical, and engineering standards considerations. (2)
5. An ability to function within a team. (5)
6. An Ability to present his/her work in written form and orally for both formal (design review) presentations and informal (progress) updates. (3)

## Lecture Topics

1. Introduction, discuss the Capstone Senior Design guidelines
2. Formulation of problem statement
3. Brainstorming and conceptual design
4. Evaluation of conceptual design
5. Detailed design

## Design Experience

High

## Coordinator

David Cochran, Ph.D.

## Date

1/27/2024