Electrical and Computer Engineering 4840
Engineering Design II
Required

Course Description:
Design, development, and testing of the engineering project proposed in ECE 4820. Interdisciplinary projects strongly encouraged. Design and test plans required.

Prerequisites:
ECE 4820 or capstone course and Professional Program status

Corequisites:
ECE 4850

Textbook:
No textbook required

Course Outcomes:
1. Demonstrated ability to define an engineering problem and identify alternate feasible solutions.
2. Demonstrated ability to successfully plan an engineering project.
3. Demonstrated ability to successfully manage an engineering project.
4. Demonstrated ability to apply systematic decision analysis to select a “best” solution to an engineering design problem.
5. Demonstrated effective oral and written skills for technical communications.
6. Demonstrated ability to apply ECE knowledge and skills to solve a significant ECE problem.

Topics Covered:
- Conceptual Design
  - Problem definition and specification development
  - Defines the final product and its expected/planned performance, not the solution
  - Idea/concept level
  - Answers what the system will do and how well it will do it
  - Documented in the proposal
- Preliminary Design
  - Choosing the solution from several feasible alternatives, using defined criteria
  - Must involve some formal decision-making process
  - Block diagram level
  - Tells how the system will do it
  - Documented in the PDR (oral .ppt presentation)
- Final Design and Implementation
  - Actually completing the project
  - Involves detail circuit/software design, component selection, packaging, etc.
  - Schematic/solder iron level
  - Demonstrates the system in operation
  - Documented in the Final Design Report, Oral Presentation, Poster Presentation
Outcome Assessments (Grades):

Project Proposal  30%
Preliminary Design Materials  25%
Preliminary Design Review  25%
Design Documentation  10%
Status Report  10%

Class Schedule:

Class  Arranged

Contribution of course to meeting the requirements of Criterion 5:

2 credit hours of Engineering Topics and contains significant engineering design content

Relationship of course to student outcomes:

g. An ability to communicate effectively.

Instructor:

Don Cripps, Principal Lecturer
January 2013