Curriculum Designation:  Required course for EE majors.

Course (Catalog) Description: Senior students work in teams to propose, design, build, and test electrical engineering devices or systems under the direction of a faculty member. Open-ended design experience with a practical problem applies a broad spectrum of engineering knowledge. Periodic written reports and oral presentations and a final written report are required. The lecture material and texts provide instructions on general project execution, technical writing, and engineering economics.

Prerequisite: EEL 4911C

Text and/Required Material:
1. Handbook of Public Speaking for Scientists & Engineers, Author: Kenny, Publisher: TAYL, Copyright Year: 1982.
2. Design for Electrical & Computer Engineers, Author: Ford, Publisher: MCG, Copyright Year: 2008.

Course Objectives:
1. Work in a multi-disciplinary team to successfully solve a technical problem.
2. Identify the requirements of an engineering problem using a needs assessment.
3. Develop a system level design using block diagrams and formulate an engineering design solution to solve the problem.
4. Estimate the costs of a project and prepare a proposed budget.
5. Prepare a project schedule and utilize project management tools to track a project’s progress.
6. Develop effective oral presentations and written documentation of a project.
7. Recognize the impact of a project’s engineering solutions on society.
8. Demonstrate working design solutions and meet verifiable performance with prototype hardware or hardware and software.

Topics covered:
1. The System Design Process
2. Requirements Analysis
3. Project Management
4. Team Dynamics
5. Effective Oral and Written Presentations
6. Preparing for life-long learning
7. Professional and Ethical Responsibility

Class Schedule: One 50 minute lecture per week and laboratory hours (3 credit hours).

Subject Area: Engineering
Significant Design: Yes

Relationship to Assessed ABET Student Outcomes: 2(a-d), 5(a-d)

Last Updated by: R.J. Perry Date: 4/30/2021