EE 493

1. **Course Number & Name:** EE 493, Senior Design Project
2. **Course Credit and Contact Hours:** 3 Units, Students work with faculty advisors
3. **Course Coordinator:** Faculty Advisor
4. **Textbook:** None
5. **Supplemental Materials:** None
6. **Specific Course Information:**
   a. **Description:** This is a capstone course. A major project designed to bring knowledge gained from various courses together to analyze, design, and implement an electronic and/or communications system in an efficient and economic manner.
   b. **Prerequisites:** EE 492 and consent of the instructor.
   c. **Co-Requisite:** None
   d. **Status:** ☑ Required for EE program, ☐ Elective, ☐ Selected Elective
7. **Specific Goals for the Course:**
   a. **Specific outcomes of instruction:** Upon successful completion of this course, the students will gain:
      i. Ability to design and test new products.
      ii. Ability to write a test plan.
      iii. Ability to operate in team and work together towards a common goal.
      iv. Ability to apply engineering design principles to formulate problem statement, analyze requirements and produce a system-level block diagram.
      v. Ability to prototype an electronic and/or software system to meet given specifications.
      vi. Ability to take a systems approach to problem solving.
      vii. Ability to work productively in a team environment.
      viii. Ability to effectively communicate technical ideas and concepts.
      ix. Ability to manage a team project, deliver timely, and be attentive to customer relationship.
      x. Ability to understand the environmental and social impacts of the design.
b. This course supports the following ABET Student Outcome:

i. **SO-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

ii. **SO-3**: an ability to communicate effectively with a range of audiences

iii. **SO-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

iv. **SO-5**: an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

v. **SO-7**: an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

8. Brief List of Topics to be Covered:

a. Test plan
b. Design documentation
c. Customer Requirement
d. Engineering Requirement
e. Preparing a funding proposal
f. Developing high-level block diagram
g. Developing project schedule
h. Project sustainability and engineering ethics
i. Developing customer survey
j. Conducting product survey