

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 the 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