

EE4220  
Senior Project Design  
Electrical and computer Engineering Department

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All emails should include at the beginning of it subject the line: SPFall07.

Failure to do so will result in emails being filtered as spam.

**Teaching**

**Assistant:** Ismael Arellano

**Office Hours:** TBD

**Course**

**Website:** <http://ece.utep.edu/research/webasp/>

**Textbooks:** There are no official textbooks for this course

**Objectives:**

1. The objective of the course is to expose students to a real life hardware design situation. The final goal is to develop a functional system that incorporates 60% to 100% hardware.
2. Expose students to hardware and software design methodologies.
3. Develop the proper documentation requirements to support and duplicate the project.
4. Effectively communicate, orally and in writing, your project to faculty, project sponsors and other students.
5. The system must include at a minimum:
  - a. Microprocessor
  - b. Sensors
  - c. User Interface (keypad, buttons, lcd display, led indicators, etc)
  - d. Final design implemented in a Printed Circuit Board.

**Student Role:**

The student role is equivalent in industry of a junior level project engineer or application engineer. Responsibilities include: overall project completion, design, construction, meeting all deadlines, producing technical documentation and reports, oral presentations, and ultimately meeting the design specifications.

**Presentations:**

Students will be provided ample opportunity to hone their oral presentation skills. They will present their own work, such as proposals, status briefings, and preliminary/final design reports.

**Notebooks:**

Each student is required to maintain a notebook which documents all work and contributions toward the project. The notebook is intended to cover both semesters of the course, and is a formal deliverable. That is, it is subject to review, grading, and is turned over to the project sponsor at the end of the project.

**Deliverables and Grading:**

- 4% Pre-proposal/introduction
- 4% Product Description.
- 4% Conceptual Diagram.
- 4% Interface Diagram/description
- 9% Engineering requirements
  - (4%) Block Diagrams.
  - (5%) Hardware requirements (memory, bandwidth, clock speed, environmental considerations, sensors, etc)
- 1% Work Matrix.
  
- 4% Firmware requirements.
  - Languages, Development environments, and Flowcharts.
- 1% Bill of Materials
- 4% Testing specifications
  
- 10% Design review (mid semester)
  
- 12% Prototype/simulations (end of semester: PCB, breadboard, code, etc)
  
- 4% webpage
  
- 8 % Presentations
  
- 12 % Final Report
  - Concatenation of all written assignments throughout the semester plus final results and analysis.
  
- 20 % Laboratory Assignments.

**Extra credit:**

- 10% Final exam.

## **Most Important**

This course information is presented to the student at the beginning of the class. However, things may change and the class information will then be updated along the way. It is important for you to check this file and the web site for the latest information. This is your responsibility.