DP123: Design Project for 1st, 2nd and 3rd Year ECE Students

ECE 297DP, Fall 2011

Description: The ECE Design Project enables undergraduate students in the Department of Electrical and Computer Engineering to design and build hardware and software projects prior to their Senior Design Project. Most projects are group projects but solo projects are also supported. The projects are mentored from concept to final designs by the course instructors and are supported by the M5 facility. ECE seniors also serve as DP123 mentors.

Students on group projects are organized into sub-teams. DP123 uses this multi-team approach to teach engineering design in an efficient and realistic manner. An engineering apprenticeship environment is used to guide the student in solving problems that may exceed their academic training. Throughout the process the student not only gains knowledge of engineering design, but is also encouraged to share their knowledge that may be helpful to others. Design creativity is encouraged. With guidance from the instructors and DP123 mentors, the student navigates through the design process to meet self-determined goals. The workshop environment inspires the apprentice engineer and provides the tools needed to plan and achieve attainable goals.

Prerequisites: Restricted to CSE, EE and ENGIN majors working on entering CSE or EE.

Instructor: Ric Zannoni

Email: rzannoni@ecs.umass.edu

Location: Marcus Hall, Room 5

Meeting Times: Monday, 14:30-17:30, Emma 5
Wednesday, 14:30-17:30, Ultra-violet
Friday, 14:30-17:30, Marc5

All design teams meet every week for a three-hour lab session. This time is used for coordination between the various sub-teams and a status update on each sub-team’s design. Additionally, the lab session is a time where the apprenticeship relationship is fostered to guide the teams and provide the needed knowledge to solve their design problems. To achieve design goals, it may be required that project work be done outside the scheduled three-hour session.
**Recommended Textbook:**
Practical Electronics for Inventors, 2nd edition (November 14, 2006)
By Paul Scherz    ISBN-10: 0071452818

**Grading:**
The grading format is Pass/Fail. Each student must successfully complete all of the following in order to earn a passing grade. Each student must play an active role in all group work.

1. Attendance: No more than two unexcused absences. Arriving more than 15 minutes after the start of the session will be counted as late. Two late arrivals equal one absence. Required attendance begins 12 September.

2. Project proposal: On the week of 26-30 September each group will must successfully pitch the project to the instructor.

3. Dress rehearsal for Circuits and Code: On the week of 14-18 November each group will demonstrate their project to the instructor and the class. This demonstration must include a proposed poster describing the project.

4. Circuit and Code Day: On Saturday 3 December each group will have a public demonstration of their project at ECE’s Circuits and Code Day.

5. Documentation: Each group will document their project for the M5 project archive. The document will include, a functional description, parts list, circuit schematic (where applicable), circuit description (where applicable), annotated code (where applicable).