

EEL4914C/EEL4915C ECE Senior Design Project II

Fall Semester 2008

Day / Time: Class Meetings: Wednesdays, 3:05-4:20 PM

Location: FAMU/FSU College of Engineering Room A337

Instructor: Dr. Jim P. Zheng
Office: Room A346 FAMU/FSU College of Engineering Building
Office Hours: 2:00-3:00pm Monday-Friday.
or by appointment (send email for appointments).
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Textbook: **Design for Electrical and Computer Engineers**, J. Eric Salt and Robert Rothery, John Wiley & Sons, Inc, 2002, ISBN: 0-471-39146-8

A Handbook of Public Speaking for Scientist & Engineers, Peter Kenny, Institute of Physics Publishing, 1982, ISBN: 0-85274-553-2

Course Web Page: A course web page is being developed under the FSU Blackboard System, <http://campus.fsu.edu>. All FSU students registered for the class are automatically enrolled on the web page. FSU students: log in using your Garnet account ID and password. FAMU students log in using their engineering account user name appended with “_eng”, and their engineering password (Example: If your engineering email address is JDoe@eng.fsu.edu and your engineering password is "eestudent", then login in as "JDoe_eng" with password "eestudent"). *FAMU student must then select the course and use the enrollment button to add their names to the course web page roll. IT IS REQUIRED FOR ALL FAMU STUDENTS TO ENROLL, AND ALL FSU STUDENTS VERIFY ENROLLMENT IN THE COURSE WEB PAGE.*

Catalog Description: Senior students are exposed to the concepts in design, project management, engineering team organization, and professionalism. Students are grouped into design teams where these principles are put into practice in organizing, proposing, and developing an engineering project. Periodic written reports and oral presentations, and a final written report are required. The lecture material and texts provide instructions on project management, ethics, and design skills.

Prerequisite: EEL4911C (Spring 2008 only)

Course Goals: The senior design project is the culmination of course and laboratory work in the bachelor's degree program in each field of engineering. In this comprehensive two-semester course, students are expected to work in teams to apply the concepts and theories of their discipline to a novel engineering project. The course is focused on both the process of engineering design as well as the completion of the project. As such multiple written reports, giving details of the project and test results, and oral presentations, giving the details of the project, are required to complete the course satisfactorily. Also each team is expected to design, implement and test an engineering prototype meeting the specifications given in class. It is expected that about twelve hours of laboratory and field work per week outside of class will be necessary for satisfactory completion of the project.

Instructional Objectives: After completing this course a successful student will be able to:

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.

Relationship to Program Outcomes: This course supports the program outcomes and objectives of the B.S.-Electrical Engineering and B.S.-Computer Engineering programs. Specifically, this course supports ABET Program Outcomes C, D, F and G (See outcomes and objectives of all engineering programs at <http://www.eng.fsu.edu/outcomes/>).

Class Policies:

Exams/Tests/Quizzes:

- Test/Quiz dates announced at least 1 week in advance.
- There is no Final Exam scheduled for this course.
- No make-ups will be granted unless **prior** approval has been obtained from the instructor.

Assignments:

- **ALL Assignments are due at the START of class on the due date.**
- Late Assignments will **NOT BE ACCEPTED**.

Attendance:

- **Class attendance is expected for all students.** College and University rules allow only 3 unexcused absences for this course. A **student exceeding 3 unexcused absences will be dropped from the course and assigned a grade of "F"**.
- **Attendance at all weekly team meetings is REQUIRED.** Unexcused absences from team meetings will result in a reduction in the individual's grade for the course.

Ethics/Honor Code:

- All students are bound by the honor code of their university. Violations of the honor code will be reported. Penalties include but are not limited to 1) failing grade on the assignment and 2) failing grade for the course.
- Homework assignments are considered *individual* efforts. Students are encouraged to discuss topics and homework, but the work itself is to be performed on an individual basis.

Students with Disabilities: Students with disabilities needing academic accommodations should:

- (1) Register with and provide documentation to the appropriate university office. For FAMU students, this is the Learning Development and Evaluation Center (LEDC). For FSU students this is the Student Disability Resource Center (SDRC); and
- (2) Bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class.

This syllabus and other class materials are available in alternative format upon request.

For more information about services available to students with disabilities:

FAMU students should contact the:
Learning Development and Evaluation Center
667 Ardelia Court
Tallahassee, FL 32307
(850) 599.3180

FSU students should contact the:
Student Disability Resource Center
874 Traditions Way
108 Student Services Building
Tallahassee, FL 32306-4167
(850) 644-9566 (Voice)
(850) 644-8504 (TDD)
sdrc@admin.fsu.edu
<http://www.disabilitycenter.fsu.edu/>

Grading Policy:

<u>Assignment</u>	<u>Due Date (tentative)</u>	<u>% of Grade</u>
Milestone 1: Detailed Design Review and Test Plan (Group Presentation and Written Document)	Report due 9/24 Present before 10/3	20%
Engineering Ethics Homework/Assignment	Due 10/8	5%
Engineering Economics Homework/Assignment	Due 10/22	5%
Milestone 2: Hardware Competition (and Hardware Demonstrations at Design Fair)	Competition 11/5	25%
Design Fair	Design Fair 11/19	10%
Engineering Notebooks	Due 11/26	15%
Milestone 3: Project Final Report (Group Presentation and Written Report)	Report Due 11/26 Present before 12/5	20%
Peer Reviews	In Class 12/3	±10%

Each milestone must be completed prior to proceeding to the next milestone. Each component listed above must be completed successfully in order to receive a passing grade in the course. Milestones 1 and 3 grades are 60% written report and 40% oral presentation. Oral presentations are expected to be conducted in a professional manner with appropriate dress, conduct and presentations. Note that oral presentation grade is based ½ on individual scores and ½ on team scores. All homework/assignments are to be worked on individually and will be individually graded. Each person is required to submit an engineering notebook where daily activities are properly logged and signed. Thus 38% of your grade is based on individual performance and 62% on the performance of your team. **It pays to work together!** In addition, the team's peer evaluations can increase or decrease your grades by up to 10%. **It pays to do your own part as well!**

In addition to the items above, project teams will also be required to meet with the instructor on a weekly basis, and to keep minutes of those meetings. The teams will also be required to give status reports four times during the semester. **Failure to meet weekly, or to submit meeting minutes and status reports will result in grade reductions.**

Questions, problems and errors involving the grading of any assignment or quiz must be brought to the attention of the instructor **within 1 week** of the grade being posted on the course web site. A student's absence from class does not extend the time limit. After 1 week the grade is final and will not be reviewed at the student's request.

Tentative Class Schedule (subject to modification; provided only for planning purposes)

Month	Day	Topic	Activity	Textbook
August	27	Overview of Second Semester	❖ Schedule Weekly Team Meetings	
September	3	Review of Detailed Design	❖ First Weekly Team Meetings	
	10	Instruction for Detailed Design Review	❖ DUE: ➤ Weekly Meeting Report (Post in Group File Exchange)	
	17	Instruction for Test Plan Report	❖ DUE: ➤ Weekly Meeting Report	
	24	Engineering Ethics II	❖ DUE: ➤ Detailed Design Review and Test Plan Report ➤ Weekly Meeting Report ❖ Presentations during next week	
October	1	<Presentations>	❖ Detailed Design Review and Test Plan Presentations ❖ DUE: ➤ Weekly Meeting Report	
	8	Engineering Economics	❖ DUE: ➤ Engineering Ethics Homework ➤ Weekly Meeting Report	
	15		❖ Due: ➤ Weekly Meeting Report	
	22		❖ DUE: ➤ Engineering Economics Homework ➤ Weekly Meeting Report	
	29		❖ Due: ➤ Weekly Meeting Report	
November	5	<Competition>	❖ COMPETITION ❖ DUE: ➤ Weekly Meeting Report ❖ Milestone 3 Completed	
	12	Design Fair Instructions	❖ DUE: ➤ Weekly Meeting Report (Incl. results/analysis of competition)	
	19	<Design Fair>	❖ DESIGN FAIR & Final Hardware Demo ❖ DUE: ➤ Project Final Report ➤ Individual Engineering Notebooks ➤ Weekly Meeting Report	
	26		❖ Due: ➤ Weekly Meeting Report	
December	3	Peer Review and Course Evaluations	❖ Final Oral Presentations / Examinations ❖ DUE: ➤ Peer Reviews (in class) ➤ Course/Instructor Evaluation (in class)	

Note: Dates and material covered are subject to modification at any time.