EEL4911C   Senior Design Project I
Spring Semester 2008

Day/Time: Class Meetings: Monday/3:05-4:20pm

Location: FAMU/FSU College of Engineering Building Room: A337

Instructor: Dr. Jim P. Zheng
  Office: Room A346 FAMU/FSU College of Engineering Building
  Office Hours: 2:30-3:30pm Tuesday-Friday.
                       or by appointment (send email for appointments).
  Phone: 410-6464
  Email: zheng@eng.fsu.edu
  Website: http:/www.eng.fsu.edu/~zheng/

Textbook: **Design for Electrical and Computer Engineers**, J. Eric Salt and Robert
                       Rothery, John Wiley & Sons, Inc, 2002

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 <u>FAMU</u> STUDENTS TO ENROLL, AND ALL <u>FSU</u> 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: <u>For EE Majors</u>: EEL3111, EEL3112, EEL3705, EEL3300, and at least 4 out of the
                    following 5 required EE courses: EEL3135, EEL3472, EEL3512, EEL4021,
                    EEL4746.
                    <u>For CpE Majors</u>: EEL3111, EEL3112, EEL3705, EEL3300, EEL4746, EEL4712, and
                    COP 3530 (FAMU) or COP 4530 (FSU)

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. Identify engineering problems using a needs assessment.
2. Estimate the costs of a project and prepare a proposed budget.
3. Prepare a project schedule.
4. Develop effective oral presentations and written documentation.
5. Utilize available resources to engage in life-long learning.
6. Recognize the impact of engineering solutions on society.
7. Develop an understanding of the professional and ethical responsibility.

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 F, G and I (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.

Cellular Phone:
- Cellular phones and beepers must be turned off in the classroom.

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: FSU students should contact the:
Learning Development and Evaluation Center   Student Disability Resource Center
667 Ardelia Court   874 Traditions Way
Tallahassee, FL 32307   108 Student Services Building
(850) 599.3180   Tallahassee, FL 32306-4167
                                                (850) 644-9566 (Voice)
                                                (850) 644-8504 (TDD)
                                                sdrc@admin.fsu.edu
                                                http://www.disabilitycenter.fsu.edu/

Grading Policy:

Assignment	Due Date (*tentative*)	% of Grade
Milestone 1: Needs Analysis and Specifications (Group Presentation and Written Document)	Report due 2/4 Present before 2/11	20%
Milestone 2: Project Proposal (Group Presentation and Written Document)	Report Due 3/3 Present before 3/7	30%
Professional Engineering Homework	Due 3/24	5%
Visiting the 2nd-Semester Senior Design Fair (Typically held during Week 10 of the semester)	TBA	5%
Milestone 3: System Level (Conceptual) Design Review (Group Presentation and Written Report)	Report Due 3/31 Present before 4/7	30%
Engineering Ethics Homework	Due 4/7	5%
Final Quiz on Engineering Ethics and Professional Engineering	in Class 4/14	5%

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. Milestone 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 20% of the grade on each milestone activity will be based on individual performance and 80% on team performance. All non-milestone graded activities are to be worked on individually and will be individually graded. Thus 36% of your grade is based on individual performance and 64% on the performance of your team. **It pays to work together!**

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
January	7	Introduction	❖ Review Design Project	Ch. 1
	14	The Design Process	❖ Team Assignments **Completed** ❖ **START** Weekly Team Meetings	Ch. 2

	28	Requirements and Needs Analysis	❖ **DUE:**
			  ➢ Weekly Meeting Report
			    (Post in Group File Exchange)
				Ch. 3

February	4	System Design	❖ **DUE:**
			  ➢ Weekly Meeting Report
			  ➢ **Needs Analysis & Specifications Reports**
			❖ Presentations during next week
				Ch. 4

	11	The Project Proposal	❖ **DUE:** ➢ Weekly Meeting Report ❖ Milestone 1 **Completed**	
	18	Project Management	❖ **DUE:** ➢ Weekly Meeting Report	Ch. 5
	25	Project Management – Part II	❖ **DUE:** ➢ Weekly Meeting Report	Ch. 5 (cont)

March	3	Engineering Licensing	❖ **DUE:**
			  ➢ Weekly Meeting Report
			  ➢ **Project Proposal**
			❖ Presentations during next week	

	17	The System Level Design Review	❖ **DUE:** ➢ Weekly Meeting Report ❖ Milestone 2 **Completed**	

	24	Detailed Design Testing	❖ **DUE:**
			  ➢ Weekly Meeting Report
			  ➢ Professional Engineering Homework
				Ch. 6

	31	Engineering Ethics and Professional Responsibility	❖ **DUE:**
			  ➢ Weekly Meeting Report
			  ➢ **System Level Design Review Report**
			❖ Presentations during next week	

April	7	The Critical Design Review	❖ **DUE:** ➢ Weekly Meeting Report ❖ Milestone 3 **Completed**	

	14	Final Quiz on Engineering Ethics	❖ **DUE:**
			  ➢ Weekly Meeting Report
			  ➢ Engineering Ethics Homework
			❖ Weekly Meeting will be a demonstration of design progress.	

	21		❖ **DUE:** ➢ Weekly Meeting Report	

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