ECE 480 Syllabus

Course: ECE 480

Credit Hours: 3

Course Title: Senior Design Project in Electrical Engineering

Course Description:

Applications of engineering and basic sciences to the total design of Electrical Engineering circuits and systems. Consideration of the design process including feasibility study, preliminary design detail, cost effectiveness, along with development and evaluation of a prototype accomplished through design-team project activity. Complete written and oral engineering report required.

Prerequisite(s): ECE 303, ECE380, ENG 331 and any 2 ECE 400 intermediate electives

Textbook(s) and/or other required material:

Electronic Instruments Design Ã¢â‚¬â€œ Architecting for the Life Cycle; K. R. Fowler, Oxford Press; 1996 (ooptional); Class Notes on course Webpage

Course objectives. By the end of this course, the student should be able to (use demonstrative verbs):

1) Follow a process for designing a system.
2) Design a system to meet defined functional requirements.
3) Build a working prototype of a designed system
4) Write a formal technical document that describes a system, its operation and its construction.
5) Practice group dynamics and team building.
6) Write a project plan for completing and managing a project.
7) Operate test equipment and design tools for the design, test and troubleshooting of a system.
8) Present oral technical reviews of a project to a technical audience
9) Demonstrate the functionality and operation of a system for a general audience.

Topics covered:

Design Process and Documentation (5)
Project Management and Team Building (1)
Construction Practices (4)
Oral Presentations (3)

Class/laboratory schedule (sessions per week and duration of each session):

Project Objective- 1 or 2 lectures/week for three weeks; Project Management Objective Ã¢â‚¬â€œ 1 lecture; Construction Practices- 2 lectures/week for two weeks; Oral Presentation Objective-3 lectures prior to presentations; Laboratory open 24 hours, 7 days a week with TA and Professor help available.

Contribution of course to meeting the requirements of Criterion 5 - other:

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None

Contribution of course to meeting the requirements of Criterion 5 - math and basic sciences:

Contribution of course to meeting the requirements of Criterion 5 - engineering topics:

4 hours

Contribution of course to meeting the requirements of Criterion 5 - general education:

Relationship of this course to program learning outcomes:

Learning Outcome	Level of Instruction	Related Course Content
Outcome A	Intermediate	Students apply knowledge of math, science and engineering in designing a solution to their Senior Design Project.
Outcome B	Intermediate	Students design and conduct experiments to understand new technologies used in their projects.
Outcome C	Major	Students are given a one or two paragraph description of a product concept. They are required to clearly define the product requirements, investigate alternative solutions and choose an implementation.
Outcome D	Major	Student teams of 3 to 4 are formed for each project. Teams conduct regular meetings among themselves and with sponsors. Each team manages their projects according to

Relationship of this course to program learning outcomes:

Learning Outcome	Level of Instruction	Related Course Content
		principles of project management.
Outcome E	Intermediate	Students are given a one or two paragraph description of a product concept. They are required to clearly define the product requirements, investigate alternative solutions and choose an implementation.
Outcome F	N/A	
Outcome G	Intermediate	Students generate a formal document describing their project in detail, write biweekly status reports and write a project plan. Students give oral presentations of their projects and they demonstrate their project prototypes to faculty and students.
Outcome H	N/A	
Outcome I	N/A	
Outcome J	N/A	
Outcome K	Intermediate	Students apply skills developed in the classroom to complete their projects. Students use professional development tools, simulators, and test equipment in completing their projects. .

Person who last prepared this description and date of preparation:

Relationship of this course to program learning outcomes:

Learning Outcome	Level of Instruction	Related Course Content

- Greene, Barton J (bjgreene) - Mar 31st, 2009 (12:05pm)