

ENGR 4412/4422
Senior Engineering Design I & II
Fall 2004
Department of Physics and Engineering
University of Central Oklahoma

Location	Howell Hall 106
Time	M from 1:00 – 3:50 p.m.
Instructor	Evan Lemley, Ph.D.; Assoc. Prof., Department of Physics and Engineering
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Office Hours	TR 10:00 a.m. - 11:00 a.m. & F 9:00 a.m – 10:00 a.m. or by appointment.
Final	M December 13, 2004 from 1:00 p.m. – 2:50 p.m. See Below.

Final

There is no Final Exam for this course, but on the day of the final all students will participate in project presentations.

Course Description

Through discussions with the course instructor and other faculty members, students will determine a design-related engineering problem they wish to study. A detailed written project proposal will be submitted and approved by the chosen faculty project director. Working as individuals or in teams, students will apply the design process by developing projects from the proposal stage to the test, evaluation, and implementation stages. Students are expected to follow this course with ENGR 4422 Senior Engineering Design II.

Prerequisites

ENGR 3312 Engineering Laboratory II.

Textbook

There is no textbook for this course. The instructor will hand out guides for proposal writing, design methodology, report writing and other topics.

Objectives

Upon completion of this course, the student will be able to

1. Identify an engineering or research problem and state the problem with realistic constraints.
2. Prepare a written proposal for a project that contains engineering design solutions or a research plan that will satisfy stated constraints.
3. Propose a plan of work to complete the solution to an engineering or research problem and to meet a deadline.
4. Work as a team member or an individual to develop a solution to an engineering or research problem.

Course Outline

1. Individuals or groups identify an engineering or research problem through literature review and discussions with Physics and Engineering Faculty. If a student wants to propose his/her own design project the student must write a brief document (with literature review) that documents an engineering or research problem and a basic idea for solution of the problem.
2. Individuals or groups each identify a Faculty Project Director. Once the faculty member and project are chosen, the student(s) involved in the project must complete a form that contains the signature of the project director as well as one more faculty member that is willing to serve as a Project Reviewer. Project Reviewers will read any project reports and may serve as advisers for the chosen project. Project Reviewers need not be faculty members, but must be approved by the course instructor.
3. The Individuals or groups produce a proposal that includes potential solutions to the chosen engineering or research problem and a budget. The proposal will follow a specific format specified by the instructor.
4. Work as a team member or an individual to develop a solution to the engineering or research problem

Instruction Techniques

25% lecture // 75% project progress reports and direct interaction with each group.

Grading Policies

The following table shows the breakdown of credit for the course.

Project Proposal	25%
Project Memos	25%
Project Report	25%
Project Presentation	25%
Total	100%

Tentative Grading Scale

90-100% -- A, 80-90% -- B, 70-80% -- C, 60-70% -- D, <60% -- F