Mechanical Engineering Dept. Department

Syllabus
ME 411: Senior Design Project I (1-0-1)

Course Catalog Description:

This capstone design project course integrates various components of the curriculum in comprehensive engineering experience so that the basic sciences, mathematics, and engineering sciences which the student has learned in his freshman-to-senior years of study can be applied. It considers design of a complete project or system including establishment of objectives and criteria, formulation of the problem statements, preparation of specifications, consideration of alternative solutions, feasibility considerations, and detailed engineering designs. The design should take into consideration appropriate multiple realistic constraints such as economic factors, safety, reliability, ethics and environmental and social impact as well as related standards. Submission of a written report is an essential requirement for completion of the course. Team design projects, where appropriate, are highly encouraged.

Course Pre-requisites:

- ME 301: Machine Design I
- ME 307: Machine Design I

Course Objectives:

1. Students will learn to identify customer needs as well as current global and local demands.
2. Students will learn to write product design specifications with engineering standards and realistic constraints.
3. Students will learn to know how to generate design concept and present them through hand-sketch and CAD tools.
4. Students will learn to acquire and apply necessary new knowledge required to complete their design work.
5. Students will learn to work in team to analyze and test the design though engineering principles.
6. Students will learn to manage, plan and execute their project tasks and milestones in a collaborative team.

Course Learning Outcomes:

CLO1. 1,2

CLO2. 4,5

CLO3. 7

CLO4. 3

Learning Resources:

- Lecture notes and slides to be posted in Blackboard.

Lecture Assessment Plan:

Assessment Task	Week Due	Weight
Course Coordinator - Submission of Progress Report	12	4.0%
Course Coordinator - Attendance	15	5.0%
SDP Project Adviser - Evaluation Form	15	80.0%
Course Coordinator - Assignment 1: Project Design Method	6	5.0%
Course Coordinator - Assignment 1: Project Design Method	7	6.0%

Lecture Weekly Schedule:

Week#	Topics
1	Introduction about the course
2	Introduction about the course (Continue)
3	Ethics, Standards and Codes, Constraints and Contemporary Issues
4	Ethics, Standards and Codes, Constraints and Contemporary Issues (Continue)
5	Entrepreneurship, Marketing and Market Research
6	Entrepreneurship, Marketing and Market Research (Continue)
7	Patents & Copyrights
8	Patents & Copyrights (Continue)
9	Product Design Process
10	Product Design Process (Continue)
11	Prototyping
12	Prototyping (Continue)
13	Project Management
14	Project Management (Continue)
15	Effective Communication