ENGR 401: FALL Syllabus

Week #

1  EIC Introduction
   Lecture(Marino): Design and Development methodology
   Lecture(Marino): Concurrent Engineering techniques

2  Lecture(Elzey): Project Management principles
   Contract Book and Engineering Log Book
   Team organization and team meetings

3  In-depth development of the **Statement of Work**
   First draft of the **Gantt Chart**

   Assigned reading: **Product Design and Development**
   Ulrich and Eppinger
   Chapter 1 – Introduction
   Chapter 2 – Development Processes and Organizations
   Chapter 3 – Product Planning
   Chapter 16 – Managing Projects
   (Assigned readings are to be read before the listed class in preparation for detailed discussions at the team/mentor meetings)

4  **Customer Needs**
   **Product Requirements**
   **Product Specifications**
   **Engineering Analysis I**

   Chapter 4 – Identifying Customer Needs
   Chapter 5 – Product Specifications

5  Preliminary Design Review #1
   Presentation to class and faculty by the entire team using Power Point and displaying all items of documentation as bolded above. Special emphasis is placed on changes from the last presentation and other key issues discovered.

6  Research / Search for solution fragments
   Concept selection

   Chapter 6 – Concept Generation
   Chapter 7 – Concept Selection
   Chapter 8 – Concept Testing
7  Product architecture
   Product schematic (both functional and physical)
   System block diagram(s)
   Engineering Analysis II

   Chapter 9 – Product Architecture
   Chapter 10 – Industrial Design

8  Costing Model
   Budget
   Bill of Material
   Routings

   Chapter 11 – Design for Manufacturing (Appendices A-D)
   Chapter 15 – Product Development Economics

9  Preliminary Design
   System Drawings
   Component Drawings

   Chapter 13 – Robust Design

10 (10/25/06)  Preliminary Design Review #2
   Presentation to class and faculty by the entire team
   using Power Point and displaying all items of
   documentation as bolded above. Special
   emphasis is placed on changes from the last
   presentation and other key issues discovered.

11 (11/1/06)  Lecture(Elzey): Risk Analysis
   Risk Mitigation Plan

12 (11/8/06)  Key component prototype development

   Chapter 12 - Prototyping

13 (11/15/06)  Component Test Plan and Results
   System Test Plan

14 (11/22/06)  *** Thanksgiving Recess ***

15 (11/29/06)  Design revisions
Final Design Review to class and faculty
This presentation is done by the entire team displaying all items of documentation.

Other Lectures:

To be determined

These lectures of 30 minute duration will be scheduled throughout the semester as required and will be scheduled at the normal class time.

Team meetings:

Each team will meet once a week with their team mentor to review the project status and the current assignment. These meetings will be scheduled outside the regular class time by the mentor.

Teams are strongly urged to meet among themselves at least once a week to jointly prepare the current assignment for review with the team mentor at their weekly meeting. Reviewing their respective activities and resolving issues that will arise are other worthwhile team objectives. Also, work on the presentations should be done together and reviewed with their mentors prior to the formal presentation.

Grading:

There are both team and individual aspects that will make up your grade.

Team attributes:
  Quality of documentation
  Organization of work
  Clarity of ideas
  Schedule and budget adherence
  Team dynamics as a team

Individual attributes:
  Engineering skill use
  Communication skills
  Team dynamics as a team member