1. **Course number and name**  
   EE 415: Design Project Management

2. **Credits and contact hours**  
   3.0 (one lecture hour per week plus 6 lab hours per week)

3. **Instructor’s or course coordinator’s name**  
   Patrick Pedrow

4. **Textbook, title, author, and year**  

5. **Specific course information**  
   a. **Catalog description:** Project scheduling/planning, technical writing, oral presentation skills, working in teams, total quality control (TQC), total quality management (TQM), and market-driven organizations.  
   b. **Prerequisites or co-requisites:** EE 341 with a C or better and EE 361 with a C or better; or EE 334 with a C or better and CPT S 360 with a C or better; certified major in Electrical Engineering, Computer Science, or Computer Engineering.

6. **Specific goals for the course**  
   At the end of this course, students must be able to:  
   - Clarify a design problem. (1, 2, 4, 7)  
   - Identify stakeholders. (2, 4, 6)  
   - Identify client needs. (2, 4, 6)  
   - Map client needs to target technical specifications. (1, 2, 4, 6)  
   - Conduct impact analysis with techniques such as use case scenarios, fault trees and design for environment algorithms. (1, 2, 4, 7)  
   - Decompose a system into a set of subsystems or a sequence of events. (1, 2)  
   - Generate design concepts that meet target technical specifications. (2, 7)  
   - Apply decision matrices to select the optimal design concept from a matrix of design concepts. (1, 2, 4, 6)  
   - Demonstrate competency with teaming skills. (2, 3, 4, 5)  
   - Design, model, construct, test, and demonstrate a prototype that satisfies client and stakeholder needs. (1, 2, 4, 6, 7)  
   - Communicate in written, oral and graphical formats. (1, 2, 3, 4)

7. **Brief list of topics to be covered**  
   - Teaming activities including selecting communications liaison, responding to breakout session prompts, interacting with industry mentor, and engaging in the iterative design process,  
   - Problem clarification activities including interviewing the team's client, identifying project stakeholders, locating raw data, and determining needs that must be satisfied by the design,
● Engineering professional skills activities including impact analysis using tools such as use case scenarios, fault trees, and design for environment,
● Work with technical specifications including identifying metrics and values that map to client and stakeholder needs,
● Concept generation activities including system decomposition into subsystems or into a sequence of events followed by generation of concept combination tables, literature searches, patent searches, benchmarking, and brainstorming,
● Concept selection activities including the use of scoring matrices,
● Communication activities including presenting an alpha prototype demonstration to an audience and a written report on that event,
● Students modify their design based on alpha prototype outcomes,
● Students engage in online chat stream discussions that are archived and capture the team's design process,
● Teams write and circulate monthly reports to faculty and industry volunteers.