SYST 490

Fall 2010

Senior Design I

First semester of two semester capstone course in Systems Engineering program. Students apply knowledge they have gained to group project. During first semester, students perform concept definition and requirements analysis. Plan for carrying out project is developed, culminating in proposal presented to faculty at end of semester.

<u>Course objectives</u>
- Provide students the opportunity to apply and synthesize **knowledge** and **skills** they have gained in the SEOR program to real-world problems
- Prepare students for the professional environment.

<u>Learning outcomes</u>

After successfully completing the course, students will be have demonstrated:
- Project Planning
- Budgeting
- Problem Identification and Definition
- Requirements Elicitation, Requirements Definition
- Value Hierarchy/Utility Theory
- Simulation
- Modeling
- Design of Experiments
- Data Analysis
- Testing, Verification and Validation
- Problem Solving
- Team Building
- Communication
- Technical Report and Proposal Writing
- Poster Preparation
- Conference Paper Preparation
- Time Cards and Weekly Accomplishment Summaries
- Professionalism under adversity

Engineering Building 2211

3:00 pm - 4:15 pm

Office hours 1pm – 3pm Wed

Week	Monday	Agenda	Wednesday	Agenda
1	Aug 30	Course Overview	Sept 1	Case Study 1
2	Sept 6	Labor Day	Sept 8	Project Assignments
3	Sept 13	Team Research	Sept 15	Team Research
4	Sept 20	Case Study 2	Sept 22	Case Study 3
5	Sept 27	Customer Meeting/Team Research	Sept 29	Customer Meeting/Team Research
6	Oct 4	Prelim Project Plan Due Project Briefing #1	Oct 6	Project Briefing #1
7	Oct 11	Project Briefing #1	Oct 13	Project Briefing #1
8	Oct 18	Mid-term Exam	Oct 20	
9	Oct 25	Customer Meeting/Team Research	Oct 27	Customer Meeting/Team Research
10	Nov 1	Project Briefing #2	Nov 3	Project Briefing #2
11	Nov 8	Project Briefing #2	Nov 10	Project Briefing #2
12	Nov 15	Customer Meeting/Team Research	Nov 17	Customer Meeting/Team Research
13	Nov 22	Dry Run Final Report	Nov 24	Dry Run Final Report
14	Nov 29	Dry Run Final Report	Dec 1	Final Report Presentation
15	Dec 6	Final Reports Due	Dec 8	
16	Dec 13		Dec 15	Written Final Exam

Syllabus subject to change without notice.

Deliverables:
1. Individual Time Cards (hard copy due Monday before class)
2. Team Accomplishment Summary (hard copy due Monday before class) [Accomplishments, Issues, Plans for Next Week]
3. 360 degree team evaluations (tbd)
4. Preliminary Project Plan (Oct 4)
5. Briefings (paper copy due in class *prior* to briefing)
6. Proposal Presentation (Dec 1)
7. Proposal Final Report (Dec 6)
8. Draft Conference Paper (Dec 6)
9. Draft Poster (Dec 6)

Content of Briefings and Reports

Project Briefing #1: Context, Stakeholder Analysis, Problem Statement, Proposed Solutions, Method Analysis/Simulation, Project Plan/Budget

Project Briefing #2: Method Analysis/Simulation & Design of Experiment

Final Reports: Context, Stakeholder Analysis, Problem Statement, Proposed Solution, Method Analysis/Simulation, Design of Experiment, Prelim Results, Project Plan/Budget

Grades:

Quizzes 10%
Mid-term Exam 10%
Final Exam 10%
Deliverables (8) 60%
Professionalism 10%

Deliverables handed in late by the next class will be penalized 50%. Deliverables handed in after that will receive 0%. No exceptions.

A   93%   Exceptional in all respects
A-   90%   Excellent, shows clear understanding of concepts and application of ideas
B+   88%   Very good, shows basic understanding of concepts and application of ideas
B   83%   Good, shows acceptable understanding, baseline for undergraduate work
B-   80%   Adequate, shows acceptable understanding, but with deficiencies
C+   78%   Weak, but minimally meets requirements
C   70%   Very weak, but minimally meets requirements
D   60%   Misses several requirements, but not to the point of being considered failing

All grades are final.

Honor code strictly enforced.