

**Daniel J. Epstein**  
**Department of Industrial & Systems Engineering**



## ISE495ab Senior Project Design (2 units) – RTH 105

Fall 2010  
 Coach Monday, Wednesday 8:00-9:30 am as required  
 Dr. F. Stan Settles (settles@usc.edu)  
 Office phone: (213) 740-0263  
 Office: GER240

Asst. Coaches Dr. Raymond Rakhshani (rakhshan@usc.edu)  
 Office hours: Mondays 11:00A - Noon

Prof. Ted Mayeshiba ([mayeshib@usc.edu](mailto:mayeshib@usc.edu)) (best way to contact)  
 Office hours: Fridays 4:00P – 5:00P or (best) by appointment  
 Alt. contact: SKYPE: Mayeshiba (by appt.)  
 Scheduled availability can be viewed at:  
[http://tungle.me/prof\\_mayeshiba](http://tungle.me/prof_mayeshiba)

Office: SSC101  
 Office phone: (213) 740-0867 (by appt.)

### Prerequisite / Co-requisite

- Preparation and development of the senior project proposal.
- Not available for graduate credit.
- Senior standing in industrial and systems engineering.
- Open only to industrial and systems engineering students.
- Corequisite: (ISE-225 and ISE-310) and 1 from (ISE-382 or CSCI-485)

### Introduction and Purposes

This course serves as the experiential capstone in the undergraduate ISE curriculum -- to apply your classroom knowledge to a real project in a real work setting. In the past decade the U.S. manufacturing industries such as automotive and aerospace adopt, implement and evolve “Lean” approaches based upon the Toyota Production System, Six Sigma, and other enterprise change models. Lean has led to significant reductions in cost and time to produce products with superior quality and performance. It is from this framework and perspective, that the student will see how ISE tools can be used to analyze and frame problem statements in real life situations.

The students in this class will learn:

- • To handle difficulties associated with defining and organizing a realistic problem statement
- • To manage impediments in obtaining information and approval
- • To present and sell ideas to higher-level management
- • To convert a project's worth into financial indicators
- • To understand the importance of the need for a continuous exchange between engineers, management and employees in solving an existing problem, given a set of constraints
- • To gain experience in the organization and management of a technical project including application of industrial engineering tools and methods, time and cost estimates, communication techniques, and project monitoring and follow up
- • To learn about the politics of a company and how it impacts a consultant team's progress
- • To meet aggressive deadlines in a multidisciplinary team effort
- • To improve project-based presentation skills, both in-class and in company settings
- • To establish contacts with local industry
- • Recognize the need for Lean and its value to an organization
- • Describe opportunities for applying lean in their future work assignments

### Course Text Requirements



Required Texts:

- *Fundamentals of Project Management, James P. Lewis, American Management Association, 2002*
- *Installing Efficiency Methods, C. E. Knoeppel, The Engineering Magazine Company, 1917 republished by Google Books. Available on Blackboard site under Course Documents.*

This course extensively uses the *BlackBoard* site. It is expected that the students are skilled in uploading and downloading files and other documents which are provided regularly through the class *BlackBoard* site.

**Schedule:** (Timing is **approximate** and subject to **change**. This is a living document, and will be modified based on the course requirements.)

Wk	Date	Topic	Date	Topic	HW	495B
1	23-Aug	Orientation	25-Aug	495b	Prepare bio on self	
2	30-Aug	Bio presentation	1-Sep	495b presentation	Read Knoeppel Ch 1-5 Team Prefer.	Update 1
3	6-Sep	LABOR DAY HOLIDAY	8-Sep	Ethics	Visit client	
4	13-Sep	Intro to Enterprise Lean Thinking / VSM	<b>16-Sep</b>	FRIDAY - Simulation 9A - 3P	1 <sup>st</sup> presentation	
5	20-Sep	Background Presentation	22-Sep	Background Presentation	Visit client	Update 2
6	27-Sep	Midterm 1	29-Sep		Visit client	
7	4-Oct	Lean Engineering	6-Oct		Visit client	
8	11-Oct		13-Oct	Presentation Lecture	Visit client	Lecture (AN)
9	18-Oct	Midterm2	20-Oct		2 <sup>nd</sup> presentation	
10	25-Oct	Problem Presentation	27-Oct	Problem Presentation		Update 3
11	1-Nov	Variability	3-Nov		Visit client	
12	8-Nov	Quality	10-Nov		Visit client	
13	15-Nov	People	17-Nov		Visit client	
14	22-Nov	495b	24-Nov		Prep Dress Rehearsal	Dress Rehearsal
15	29-Nov	Dress Rehearsal	1-Dec	Dress Rehearsal		
16	6-Dec	Meet with Company	8-Dec			
17	13-Dec	Meet with Company	15-Dec			

## Grading Breakdown

	495A	495B
Progress Update Reports (3 for 495a; 4 for 495b)	15%	20%
Peer Review (2) (ability to evaluate others)	10%	20%
1 <sup>st</sup> Midterm	15%	NA
2 <sup>nd</sup> Midterm	15%	NA
Final Sponsor Evaluation (Report/Presentation)	25%	30%
Instructors Evaluation <ul style="list-style-type: none"><li>■ Peer review</li><li>■ Interim feedback from sponsor and representatives</li><li>■ WBS contribution for each progress report</li><li>■ Interaction with team members</li><li>■ Attendance</li></ul>	20%	30%
Total	100%	100%

- Punctuality will be considered in. This means for meetings of your team, punctual class attendance as well as scheduled meetings with the instructor(s). Absence or extreme tardiness of a chronic nature will be noted and result in a lower grade.

### Presentations for 495a

Presentations will be timed. A portion of your grade will be evaluated on your ability to limit the total time of your presentation to 6 minutes. There are two alternatives accepted for the presentation.

1. Presentation in class with all team members using PowerPoint from the lectern
2. Video presentation taken and edited using cell cameras or better. Digital video camera is available for check out from the department.

**Everyone must participate in the presentation.**

The structure of the presentations will follow the DMAIC format as presented in class. In summary, the first presentation is background of the client company. The second presentation is problem statement and includes pictures or video of what the unacceptable condition is like. Finally, the dress rehearsal is presented in class. This presentation concentrates on the analysis of data, which has been collected.

### **Presentations for 495b**

Presentations will be timed. A portion of your grade will be evaluated on your ability to limit the total time of your presentation to 10 minutes. There are two alternatives accepted for the presentation.

1. Presentation in class with all team members using PowerPoint from the lectern
2. Video presentation taken and edited using cell cameras or better. Digital video camera is available for check out from the department.

**Everyone must participate in the presentation.**

The structure of the presentations will follow the DMAIC format as presented in class. In summary, the first presentation an update regarding the project approved from last semester and if any changes to the problem statement has occurred if any. The second presentation is a progress report on work done to date on finding a solution to the problem. Finally, the dress rehearsal is presented in class. This presentation concentrates project progress and what will be delivered to the client.

### **Statement for Students with Disabilities**

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to the professor(s) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

### **Statement on Academic Integrity**

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. *Scampus*, the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A: <http://www.usc.edu/dept/publications/SCAMPUS/gov/>. Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: <http://www.usc.edu/student-affairs/SJACS/>.