

Daniel J. Epstein
Department of Industrial & Systems Engineering



ISE495ab Senior Project Design (2 units) – KAP 160

Fall 2013	8:00-9:20 am Monday 8:00-9:20 am Wednesday	Friday as assigned in class 8:00-9:20 am usually except as noted in the schedule.
Coaches	Ted Mayeshiba (mayeshib@usc.edu) Office hours: By appointment Raymond Rakhshani (rakhshan@usc.edu) Office hours: GER216c M, W, F at 11am Office phone: (213) 740 0867	

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.
- Prerequisite: ISE-225 and ISE-310 and 1 from (ISE-382 or IOM-435)

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. Knoepfel, 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.

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 st Midterm	15%	NA
2 nd Midterm	15%	NA
Final Sponsor Evaluation (Report/Presentation)	25%	30%
Instructors Evaluation <ul style="list-style-type: none">■ Peer review■ Interim feedback from sponsor and representatives■ WBS contribution for each progress report■ Interaction with team members■ Attendance	20%	30%
Total	100%	100%

- Punctuality will be considered in the evaluation of performance. 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 Instructors Evaluation grade.

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/>.

Schedule: See calendar on the following page.

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

NOTES:

- 495B activities are highlighted in Turquoise for reference only
- Notation for classes on Fridays are listed below
- December shows available presentation times

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Department of Industrial & Systems Engineering

USC Viterbi
School of Engineering

Week	Monday	Topic	Wednesday	Topic	HW/ Other
1	Aug. 26 th	Orientation/ Ethics	Aug. 28 th	Bio. Presentation	Prepare Bio on Self
2	Sept. 2 nd	Labor Day	Sept. 4 th	495b Presentation/ Progress Update 1 due	Read Knoeppel Ch. 1 thru 5
3	Sept. 9 th	Introduction to Lean Thinking	Sept. 11 th	Deliverables/ DMAIC	495a Project Selection
4	Sept. 16 th	VSM	Sept. 18 th	VSM	495a Project Selection
5	Sept. 23 rd	Quality	Sept. 25 th	Variability	495b Progress Update 2 due
6	Sept. 30 th	Meet Your Sponsor Company	Oct. 2 rd	Meet Your Sponsor Company / Progress Update 1 due	Simulation 1a on Friday 9am to 3pm (10/4)
7	Oct. 7 th	People	Oct. 9 th	Lean Engineering	Simulation 1b on Friday 9am to 3pm (10/11)
8	Oct. 14 th	495a Presentation	Oct. 16 th	495a Presentation	495a Midterm 1a Papers Due (10/14)
9	Oct. 21 st	TPM	Oct. 23 th	5S/ Progress Update 2 due	495a Midterm 1b Papers Due (10/21)
10	Oct. 28 th	495b Presentation	Oct. 30 st	TOC	495b Progress Update 3 due
11	Nov. 4 th	Meet Your Sponsor	Nov. 6 th	Meet Your Sponsor	Fri. 11/8 – Presentation lecture
12	Nov. 11 th	495a Midterm 2	Nov. 13 th	Meet Your Sponsor	
13	Nov. 18 th	Meet Your Sponsor	Nov. 20 th	495b Meeting Dr. Higle	Progress Update 3 due
14	Nov. 25 th	495b Dress Rehearsal	Nov. 27 th	Thanksgiving	495b Progress Update 4 due
15	Dec. 2nd	495a Dress Rehearsal	Dec. 4th	495a Dress Rehearsal	495a Dress Rehearsal (12/6)