

## Syllabus – ISE 515: Engineering Project Management

Fall 2019, Tuesday 3:30pm – 6:10pm KAP158

Instructor	Herag Haleblian	Phone	626.399.3794
Office	GER242A	E-mail	<a href="mailto:Herag.Haleblian@usc.edu">Herag.Haleblian@usc.edu</a>
Office Hours	Tuesday 2:30 – 3:30pm or 6:10pm – 7:10pm	Twitter	@HeragJack

---

TA	Swathi Shetty	Phone	213.298.5658
Office	GER242C	E-mail	<a href="mailto:swathish@usc.edu">swathish@usc.edu</a>
Office Hours	Thursdays 1-3pm		

---

**Course Description:**

This course will provide you with a basic exposure to the tasks and challenges facing today's projects and in particular, those of the project manager. Imagine managing globally distributed teams while adhering to scope, budget, time constraints while balancing project risks and rigorous quality demands. This course will provide you with the tools and – as important – behavioral skills to systematically manage projects for profit and non-profit organizations. The course objectives are:

- Acquire and fine-tune the skills and techniques for the 4 phases in the life cycle of a typical project: initiating, planning, executing and closing
- Gain an understanding of essential principles associated with effective project management and how to apply these principles in the day-to-day business environment
- Familiarize yourself with commonly available computer software tools
- Understand and apply methods for solving common difficulties associated with project management

The subject matter will be covered using lectures and discussions, case studies, text reading, individual research, group discussion and preparation of a comprehensive project management plan in a team environment.

**Materials:**

*Project Management Tools and Techniques, A Practical Guide*, by Carstens, Richardson and Smith.

Publisher: CRC Press; ISBN: 978-1-4665-1562-8.

*A Project Manager's Book of Forms*, by Cynthia Stackpole. ISBN: 9781119393986

Software: Microsoft® Project: (see attached PDF for instructions) <https://viterbiit.usc.edu/instructional-support/>



<https://viterbiit.usc.edu/microsoft-imagine-downloads/> (Windows only)

*Case Studies HBR Sourced* (<http://hbr.org/>). Coursepack: TBD

OPTIONAL: Project Management Body of Knowledge: Available from the university bookstore or from the Project Management Institute website (<http://www.pmi.org/>) for PMI members.

**Course Schedule:**

Week	Milestones	Topic	Reading*
1	8/27/19	1) Class Introduction 2) Projects: Definition and Background	Chapters 1-2 <a href="#">Elon Musk Article re PM</a>
2	9/3/19 <a href="#">Student Survey</a> due on 9/6	3) Starting a Project: Business Case <b>Guest Lecture: Andrew Yeghnazar</b>	Chapters 3-5 <a href="#">Business Acumen Article</a>
3	9/10/19 HW #1 due 9/10	3b) RFP & Contracts Discuss <a href="#">Henry Tam &amp; the MGI Team</a> Class Project Kickoff (Team Assignments)	Chapters 6-8
4	9/17/19	4) Requirements/Work Breakdown Structure (WBS) 5) Project Schedule – Activity Identification <b>Microsoft Project – class exercise</b>	Chapters 9, 19
5	9/24/19 HW #2 due 9/24	<b>Guest Lecture: TBD</b> Sponsor Meetings (10 minutes per team x 3)	Chapter 10, 20
6	10/1/19	6) Activity Time Estimation Sponsor Meetings (10 minutes per team x 3) 7) Project Budget w/ Examples	Chapter 11-13, 22
7	10/8/19 HW #3 due 10/8	8) Resource Planning & Organization <a href="#">Midterm Exam</a> Review 9) Project Plan 10) Accelerate a Project	<a href="#">Managing with a Business Architect's Mindset (Part II)</a> <a href="#">Project Team Prezi</a> <a href="#">Workplace Motivation Video</a>
8	10/15/19	Start Risk PPT (20 min) <b>Midterm Exam</b>	
9	10/22/19 <b>HW #4 T or F</b>	<b>Guest Lecture: TBD Combine with Kreidler class</b>	<a href="#">Business Acumen Article</a>
10	10/29/19 Class Project Pt#1 due F 11/1	11) Risk Management 12) Project Monitoring – Controls/Quality Discuss <a href="#">Midterm Exam</a> Book of Forms / Business Architect Mindset 13) Project Execution – Change Control	Chapters 14, 16-18
11	11/5/19	14) Program Management Office (PMO) <b>Project Management Simulation – class exercise</b>	Chapters 24
12	11/12/19	15) Organization Change Management (OCM) Effective Writing / Presentation 16) Conflict Resolution – Negotiations	<a href="#">5 Steps from 12 Angry Men</a>
13	11/19/19 Class Project Pt#2 due 11/19	17) Earned Value 18) Project Closure 19) Leadership	Chapters 15, 23
14	11/26/19 <b>THANKSGIVING</b>	LAFC Tour & Discussion?? <b>Mark Morris, SVP Corporate Partnerships</b>	
15	12/3/19 Class Project Pt#3 due 12/1	Class Project presentations <a href="#">Final Exam</a> Review/Course Eval in Class (15 minutes)	
		<b>Study Days: 12/7-10; Final Exam: Tue 12/17 2-4pm</b>	

\*Note: all Chapter reading from the [Project Management Tools and Techniques](#) book

**Note: This syllabus is subject to change as announced in class.**

## Assignment Summary:

Homework #1: <ul style="list-style-type: none"> <li>Case Study: Henry Tam &amp; the MGI Team (Team Dynamics) (individual assignment)</li> </ul>
Homework #2: <ul style="list-style-type: none"> <li>Case Study: American Constructors case study, part 1 (team assignment)</li> </ul>
Homework #3: <ul style="list-style-type: none"> <li>Case Study: American Constructors case study, part 2 (team assignment)</li> </ul>
Homework #4: <ul style="list-style-type: none"> <li>Guest Lecture related homework (individual assignment)</li> </ul>
Class Project: <ul style="list-style-type: none"> <li>Hyperloop Project – 3 parts</li> </ul>

Contents	PPT
<b>Module 1: Introduction &amp; Initiation</b>	
Introduction:	
To Class and Management	#1
To Project Management	#2
Starting a Project:	
Business Case	#3a
RFPs and Contracts	#3b
Work Breakdown Structure	#4
Requirements	#4
<b>Module 2: Planning &amp; Estimation</b>	
Project Schedule - Basics, Tools	#5
Estimation	#6
Project Budget	#7
Resource Planning & Organization	#8
The Project Plan	#9
Project Acceleration	#10
<b>Module 3: Execution &amp; Monitoring</b>	
Risk Management	#11
Project Execution:	
Project Controls	#12a
Project Monitoring, KPIs	#12b
Project Quality	#12c
Project Change Control	#13
Program Management Office	#14
<b>Module 4: Closing &amp; Special Topics</b>	
Organizational Change Management	#15
Effective Communication:	
Conflict Management/Negotiations	#16
Earned Value	#17
Project Closing/Lesson's Learned	#18
Leadership	#19

**Student Portal: Blackboard (Online access to materials):**

The assignments, handouts, lecture notes, team rosters and other class information will be posted on Blackboard. All students are expected to be able to access information from here.

**Class project:**

The class project consists of a group project where project management skills will be demonstrated. The students will be provided with a project where all the elements of project planning are explicit and clearly defined. The class project will be graded based on the class presentation, final report and a Peer review rating. The groups will be created during the second week of class.

**Grading**

Participation/Simulation/Peer Reviews: 20%. This includes class participation whether in person, using the discussion board or contributing within your individual teams. Grading will be based on the impact of your participation – this means the quality and reach of your contributions. Simulation will not hurt grade but top 5 scorers will automatically get extra points.

Homework assignments/case studies: 30%. Homework must be turned in at the specified due date prior to the beginning of class. No late assignments will be accepted. One homework assignment (lowest grade) may be dropped.

Midterm: 10%. The midterm will cover all the materials covered during the first part of this course.

Class Project: 30% (part 1=6%, part 2=12%, part 3=12%)

Final Exam: 10%. may be in the form of a team case study

**Attendance:**

Regular class attendance is not mandatory but is strongly encouraged and recommended as it will significantly enhance your learning experience and impact your participation grade.

*Note: Attendance will be taken for the first two weeks of class. If a student fails to attend during this period, the student will be dropped from the class without further contact.*

**Quality Expectations:**

Professional deliverables are expected at all times, both for content and presentation. This means that all the homework, project, papers and other artifacts must be prepared using a word processor, spreadsheet or any other relevant computer software (e.g. MS Project). Make sure all documents have at a minimum:

- Your name and/or your team member names
- Date and document title

**Academic Integrity:**

The Department of Industrial and Systems Engineering adheres to the University's policies and procedures governing academic integrity as described in SCampus. Students are expected to be aware of and to observe these academic integrity standards, as they will be strictly enforced throughout the semester.

**Disability Services and Programs:**

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 me or to the TA as early in the semester as possible. DSP is located in STU 301 and is open 8:30am – 5:00pm Monday through Friday. The phone number for DSP is 213.740.0776.

## SE 515 – Engineering Project Management Topics

- Project management process – general understanding of elements
- What is the distinction between management and project management
- Difference between projects, programs and business processes
- Conceptual idea of the triple constraint; understanding what we mean by cost, schedule and performance
- Performance, schedule and cost issues – origin and avoidance
- Why does one start a project?
- Understand project initiation within context of internal and external customers
- Statement of work – what is it/application
- Elements of proposal process
- Contract types
- Program management plan
  - What is it
  - Elements
  - Planning issues
  - Benefit to PM
- Role of triple constraint in PM plan
- WBS
  - What is it
  - Meaning of product oriented, deliverable based
  - Features of a good one
  - Comparison of functional based vs. product oriented deliverable
  - Ability to construct one
- Task size guidelines
- Network diagrams
  - Understand the different types
  - Ability to translate
- Scheduling options
  - Understand types and advantages/disadvantages
- Slack and float
  - Definition
  - Identification and usage
- Cost elements
- Resource constraints
  - Identifying them
  - Effect on plan
  - Strategies to overcome
- Accelerating projects, “crashing”
- Risk
  - What is it
  - Types of risk
  - Risk statement
  - Process to manage
- Risk management plan – ability to write one
- Risk mitigation strategies – ability to identify them for various problems
- Effect of team size and project duration on project performance
- Expectations of the organization on the PM
- Skills needed by a PM
- Conflict resolution
- Measurements to show performance against the plan
- How do you make “% complete” work
- Program reviews – why, types
- Task review – why, content
- Tracking with cost vs. time upside/downside
- Earned value terminology, definition, usage, upside/downside, calculations
- Variances – definitions, calculation
- Change control
- Scope change control – elements, plan
- Completing a project- understanding the elements