

SYLLABUS

ISE 544: Management of Engineering Teams

Instructor: Lynne P. Cooper, Ph.D.
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Fall 2013 – August 26 – December 18, 2013
Monday 6:40-9:20 pm

Course Sections: 31704D (for off-campus students)
31504D (for on-campus students)

Course Unit: 3 Units

Prerequisite: Graduate student standing in engineering is required.
(Or with a special approval by the Instructor)

Students are expected to have general engineering and problem solving skills.

Class Location: USC Tutor Hall (RTH), Room 105

Office Hours: Office Hours: 5:30 – 6:30 pm, Monday on-campus
Office: GER 216C, 213-740-0867

- May need to call for access if building locked
- On-line access evenings and weekends, by appointment
- For emergencies only: 818-642-8876 and lpcooper@jpl.nasa.gov

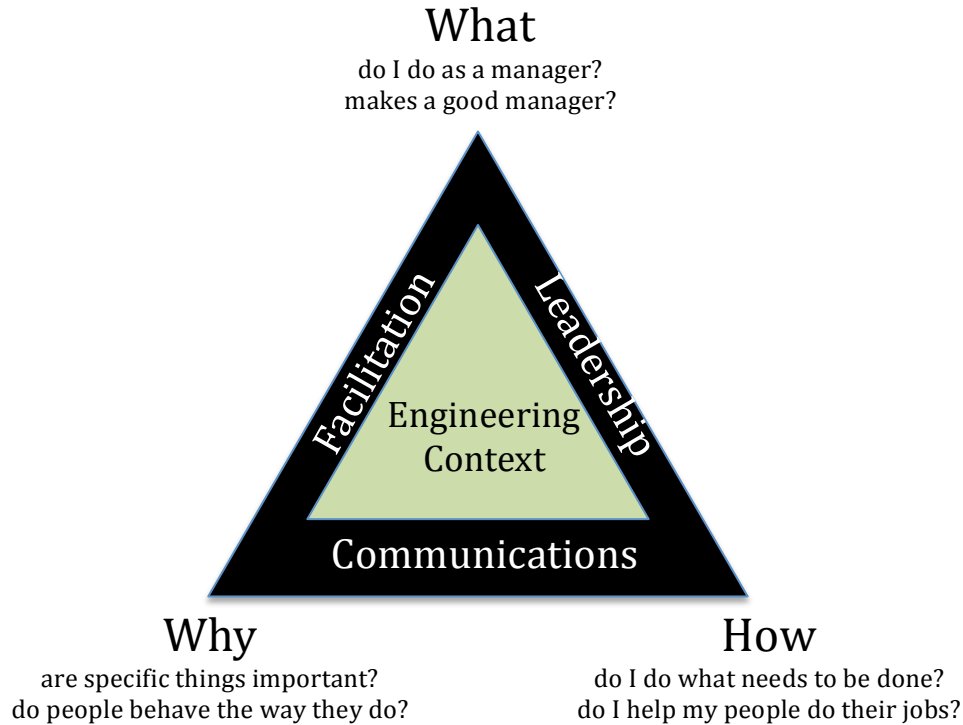
TA: TBD
Office Hours:
Work Phone:

Text Books: *The Team Handbook, 3rd Edition*
Scholtes, Joiner & Streibel
Oriol Inc., ISBN: 1-884731-26-0

Five Dysfunctions of a Team: A Leadership Fable
Patrick Lencioni
Jossey-Bass, ISBN: 0-7879-6075-6

Collaborative Intelligence: Using Teams to Solve Hard Problems
J. Richard Hackman
Berrett-Koehler Publishers, ISBN: 978-1-60509-990-3

This course provides a framework for understanding and improving the management of engineering teams. The course will explore the theoretical foundations of teamwork and leadership, along with the practical application of tools and techniques for use in work settings. Topics include team formation, dynamics, processes, organizational context, and measures of effectiveness. Special emphasis is placed on developing leadership skills for goal setting, managing conflict effectively, and giving constructive criticism and feedback; as well as developing general communications skills to work effectively in a distributed, multi-cultural environment. The course will cover what to do, why it's important, and how to do it, as depicted in the figure below:



This course follows principles for action-based and reflection-based learning. Simply put, these state that you will have a better, more effective learning experience if you (1) actively apply what you learn, and (2) reflect on what you have learned and experienced. This class therefore requires students to work in teams throughout the semester. The sequence of team exercises and small projects emphasize teamwork in an engineering context. While you will be using your existing engineering skills – you will be stretching and developing your teamwork “muscles” and the skills you need to be an effective manager of engineering teams. The projects have been scoped so that the required “taskwork” can be accomplished in a way that gives the teams sufficient time to focus on “teamwork.”

This course is a collaborative effort between students and the instructor. As such, students are encouraged to offer suggestions, communicate problems, and contribute to creating a learning experience that is valuable to them. My role is to facilitate your learning; your role is to actively learn. Let’s work together to make sure we all accomplish our goals for the semester.

Please note that you are allowed to be creative and think “outside the box” with respect to the assignments and structure of the class. Unless something is explicitly forbidden – it is fair game for modification, with the approval of the instructor. An important skill for a manager is to understand when & how to change the context to enable the team to work more effectively.

Course Components:

Students’ learning experience in this course will come from several interrelated components.

- **Classroom Lecture**

Weekly lectures will discuss the relevant theories, methodologies, processes, tools, and practice of managing engineering teams. Reading assignments from various reference resources will be given throughout the semester. All students are encouraged to study these reading assignments as a “preview” for the lectures. A combination of power point slides and in-class lecture notes will be available on the DEN site for student review.

All students are encouraged to bring their computers to class and participate in a live chat. The TA and/or instructor will monitor the chat throughout the lecture. The background chat provides a way for students to share information in real time, post questions and insights for later discussion, and connect with their fellow students. In the past, the chat interaction between the DEN students and in-class students has lead to a lively, dynamic and much more enjoyable learning environment for everyone.

Off-campus students are encouraged to watch the live web castings of classroom lectures whenever possible through the DEN systems (e.g., WebEx). Live lectures are recorded for later review by all students. Off-campus students can connect by audio via the DEN system, or participate in background chat via WebEx. For technical questions regarding remote lecture/question participations, off-campus students should consult with DEN technical staff directly. While all students are encouraged to participate in the “live” class, real-time attendance is not required, except for student presentations.

- **Class Participation**

All students are expected to actively participate in the course, either thru real-time interactions in the (virtual) classroom or via the Discussion Board. Meaningful comments, insightful questions, links to related literature and resources, and engaged discussion/Questions & Answers would contribute to a high class-participation grade. On-line quizzes, voting, and other participation opportunities will be provided throughout the semester.

Weekly Feedback: The most under-developed management skill is (arguably) the ability to give effective feedback. Fortunately, this is one skill that improves greatly with practice. Each week, students will post an example of constructive or positive feedback on the DEN discussion board. The submitted feedback will be discussed at the next class session, so feedback is due Sunday night.

- **Team Participation**

Teams will be assigned the third week of the semester based on (1) member availability and (2) preference. Students will be working in these teams for the entire semester. It is mandatory that each student commit to participating in team meetings and a weekly teamwork exercise. Each team is responsible for scheduling its own meetings.

Teamwork Exercise: Mandatory, synchronous, **on-line** meeting of team members where the team performs a task specified by the instructor. All members must participate in real-time during the exercise. It is the team’s responsibility to find a time when all team members can meet virtually. These are the types of exercises that would normally be done in-class if this were a resident-only course. Teams are responsible for providing a transcript of the chat or other record of the meeting in addition to any specified product. The time commitment for the Teamwork Session is estimated to be one-hour/week.

Team Meetings: At the discretion of the team, as needed to complete projects.

Team Leader: The team must designate a leader for each Teamwork Session and each Project so that everyone on the team has an opportunity to practice their team management skills.

Warning: Students who habitually fail to participate in teamwork exercises and/or team projects will be heavily penalized in their class participation grade.

- **Team Projects**

Project 1: Globe-Trotting. Develop a route plan, identify transportation modes, and calculate estimated time and cost for the problem presented in class. Present the results in class (5 Minutes).

Project 2: Design/Re-Design. Create a conceptual design for a product, or re-design a process of the team’s choosing, with concurrence of instructor. Present the resulting design in class (10 minutes)

Project 3: Peer-Teaching. Develop a 15-minute lesson on a subject related to Engineering Team Management (with concurrence of instructor). Present the lesson in class. (20 minutes, with questions). Note: Project 3 presentations will be staggered across two weeks.

Projects will receive one of three grades:

- Significantly exceeds expectations,
- Meets requirements,
- Does not meet requirements.

The project grade will be incorporated into the individual student's reflection assignment grade as follows: Significantly exceeds expectations (+5 points), Meets requirements (no change), Does not meet requirements (-5 points)

- **Team Leader Responsibilities**

The team leader is responsible for the successful completion of the Project or Teamwork Exercise. In addition to the team deliverables specified in the assignment, the team leader is responsible for completing a post-exercise/project report. The team leader will be the primary interface between the team and the instructor for their assigned activities. Note: the number of times a student will serve as the team leader depends on the number of students on the team, but each student will serve as leader at least once.

- **Reflection Assignments (RA)**

The teamwork exercises and projects provide a "laboratory" for studying teamwork and team management. After completing a team project, each team member is responsible for submitting an analysis of the project. These analyses are referred to as "reflections" because they are intended to guide you to reflect upon your experiences in the context of concepts learned in class. The reflections will consist of essay type answers to questions related to your experiences on the team. Students may complete the reflection assignments individually or in groups of their own choosing. Each team member will also provide constructive feedback for the team leader (the team leader will do a self-assessment). The quality of this feedback will affect the reflection assignment grade for the *provider* of the feedback, but will not affect the grade of the Team Leader. The final Reflection Assignment will be due at the start of the Final Exam (7pm, Monday, Dec 16th)

- **Mid-Term and Final Exams**

The mid-term and final exams are **open book, open notes, and will be given on-line.**

The mid-term will consist of short answer and multiple-choice type questions, with a time limit of one hour. The **October 14th** class period will be set aside for students to take the exam, and the instructor/TA will be available during that time via email to take student questions. Students unable to take the mid-term during the regularly scheduled class time will be able to take it at any time prior to 11pm (USC local time) the Sunday following class.

The final exam will be similar to the mid-term. The exam will be made available at the start of the final exam period and must be completed prior to the scheduled final exam date (7-9 pm, Monday, December 16th).

Course Website:

Students' learning of this course is supplemented by a specially designed course website on the DEN Blackboard instruction system (<http://www.uscdcn.net>). All registered students have access to this website (ISE544_20133). The course website structure is implemented to support the specific organization of the course instruction as described in this syllabus. All students should browse around the entire site to familiarize themselves with various areas and functions of this course website.

- Announcements -- important announcements of this course (check it frequently); should be on your course home page
- Course Lectures -- video files of each lecture
- Course Documents – Syllabus, DEN captured notes (materials created during class) and Presentation and Lecture Notes (prepared materials presented during class), readings, links to wikis
- Reference Materials – Readings and urls relevant to the class, but NOT REQUIRED. These can serve as resources in Project-3.
- Discussions -- share your thoughts about interesting subjects with the class, participate in virtual discussions

Course Grading:

Assignments are worth the following points:

Assignment	Points
Teamwork Exercises	50
Reflection Assignments (150, 150, 300)	550
Team Leader	50
Mid-Term Exam	100
Final Exam	100
Weekly Feedback	50
Class Participation	100
Total	1000

Grades will be based on the following:

A	> 950 points
A-	> 920 points
B+	> 890 points
B	> 850 points
B-	> 820 points

Academic Integrity:

"The Viterbi School of 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 the academic integrity standards described in SCampus, and to expect those standards to be enforced in this course."

As a special note: students are expected to understand basic principles in referencing and citing source material, including ideas and quotes. Any un-credited use of others' materials will be considered plagiarism. First offense will be a formal warning per 11.90 of the SCampus Student Guidebook and grade of "F" on assignment. Second offense will be sanctions per department policy, including "F" in course. Please review "Academic Integrity and Plagiarism at USC" (<http://ee.usc.edu/assets/011/65906.pdf>) or talk to the instructor if you have any questions.

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 me (or to TA) 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.

Course Schedule:

The Instructor reserves the right to change this schedule and topics during the semester.

Week of Semester	Date	Due at start of class	Topic	Mandatory/Recommended Reading for this class	Assigned work (for next class/es)
1	8/26		- Overview: roadmap for semester - Intro to the main models we will be using - Giving effective feedback	SYLLABUS	- Complete DEN Academic Integrity Tutorial - Student Profile on DEN Discussion Board - Availability posted on wiki - Weekly Feedback (WFB-1)
2	9/2	Profile and availability	No class – Labor Day	Handbook: Introduction Suturs (1992) Hill (2007) <i>Cannon & Witherspoon (2005)</i>	- Email any preferences or special requests regarding teaming to Professor & TA
3	9/9	WFB-1	Team Assignments Team Structure and Composition - 1	Cohen & Bailey (1997) Handbook: Chapter 1	Teamwork Exercise-1: “What’s Important” WFB-2
4	9/16	WFB-2 TW-1	Team Structure and Composition - 2	Handbook: Chapter 2	Teamwork Exercise-2: Brainstorming Start Project 1 WFB-3
5	9/23	WFB-3 TW-2	Team Processes - 1: 5 Dysfunctions of Teams	5 Dysfunctions of Teams	WFB-4
6	9/30	Project-1 WFB-4	Project-1 Presentations Team Processes - 2	Handbook: Chapter 6 <i>Gersick (1998)</i> <i>Tuckman (1965)</i>	Teamwork Exercise-3: Personality Style Reflection Assignment (RA-1) Start Project 2
7	10/7	RA-1 TW-3	Conflict	Handbook: Chapter 7 <i>Pelled & Adler (1994)</i> <i>Jehn & Mannix (2001)</i> <i>Griffith, Mannix & Neale (2003)</i>	
8	10/14		MIDTERM No Class. Complete On-line midterm during class period		WFB-5
9	10/21	WFB-5	Communications - 1	Conger (2011) <i>Elron & Vigoda (2003)</i>	WFB-6

Week of Semester	Date	Due at start of class	Topic	Mandatory/Recommended Reading for this class	Assigned work (for next class/es)
10	10/28	Project-2 WFB-6	Project 2 Presentations Communications - 2	Weeks (2011) <i>Detert & Edmondson (2006)</i>	Teamwork Exercise-4: “What were they thinking?” Reflection Assignment (RA-2) Start Project 3
11	11/4	RA-2 TW-4	Leadership/Facilitation	Handbook: Chapter 8 Bens (2007)	Teamwork Exercise-5: Strategy WFB-7
12	11/11	WFB-7 TW-5	Diversity	Brett, Behfar & Kern (2006) <i>Lau & Murnigham (1998)</i> <i>Dougherty (1992)</i>	Teamwork Exercise-6: Team Composition WFB-8
13*	11/18	WFB-8 TW-6	Guest Panel: Team leaders in practice (?)	<i>Keeney (2009)</i>	Teamwork Exercise-7: Decision Making WFB-9
14*	11/25	Project-3 WFB-9 TW-7	Course Evaluations Dysfunctional Teams Project 3 Team Presentations (?)	Nichols/Harvey <i>Milgram (1963)</i> <i>Hodges & Geyer (2006)</i> <i>Esser (1998)</i> <i>Darley & Batson (1973)</i> <i>Darley & Latane (1968)</i>	WFB-10
15*	12/2	Project-3 WFB-10	Project 3 Team Presentations (?)		Reflection Assignment (RA-3)
16	12/9		STUDY DAY		
17	12/16	Final Exam RA-3	Final Exam slot 7:00-9:00 pm. Complete on-line exam by end of exam period and submit RA-3		

*Note: Schedule is subject to change based on the availability of the Guest Panel