

University of Southern California
ISE 327 – Six Sigma and Lean Operations
TTh 12:30-1:50 pm (Online)

Instructor:	Yalda Khashe
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Catalog Course Description:

Standardized methodology for problem solving, basic and advanced statistical tools for root cause identification and solution confirmation, key principles for quality management and organizational excellence.

Text:

An Introduction to Six Sigma and Process Improvement, by James Evans and William Lindsay, Published by Cengage, 2nd edition (2014), ISBN-13: 978-1-133-60458-7

The Toyota Way: 14 Management Principles from the World's Greatest Manufacturer by Jeffrey K. Liker, Published by McGraw-Hill Education (2004), ISBN-13: 978-0071392310

Students Learning Objectives:

In this course you will learn how to tackle the following questions:

- ✓ How to define key principles for quality management and organizational excellence?
- ✓ How to define, measure, analyze, improve and control organizational processes?
- ✓ What are the main principles of a lean operation and how they can be applied to organizational processes?

Course Expectations and Policies:

Course Expectations and Netiquette: To ensure a cooperative learning environment, each student is expected to read the text before each class meeting time, and prepare to actively participate during class discussions, team-related activities, presentations and writings.

Netiquette is network etiquette; a set of rules that encourages appropriate and courteous online behavior. The list of “Netiquette Rules for Class” is included on page 7 of this syllabus. Students are expected to engage in behaviors that enhance the learning environment. Our goal is to optimize the learning experience for all the students; therefore, disruptive behaviors are prohibited and will not be tolerated.

Participation and Attendance Policy: It is expected that students will attend class regularly and participate in the class discussion throughout the semester. participation involves actively listening and volunteering answers to questions and moving the discussion along toward a shared understanding. Participation grade will be assigned at the end of the semester based on objective (contribution to class discussions, interaction with TA/Instructor inside and outside the classroom) and

subjective (contributing meaningful questions/answers, illustrating comprehension of course material) assessment by the instructor.

University policy regarding attendance in synchronous sessions requires that the students plan to attend every synchronous session for the classes in which they are enrolled, irrespective of when it occurs in their time zone. If the class falls outside the reasonable learning hours in your time zone, defined as 7:00am to 10:00pm, contact us so we can discuss your attendance and participation requirements. We also create a discussion forum for each session of the class on Blackboard to potentially move some of the class discussions online, especially to accommodate students in different time zones.

Camera Policy: To maintain class dynamics to the extent possible in the online/virtual environment, that students are expected to have their **cameras on** during synchronous online sessions. You can use virtual backgrounds for a more private setup and earphones or headsets to improve audio quality. Please contact me directly if you have any concerns or limitations regarding the camera-on policy and we will discuss expectations and accommodations needed.

Recording Online Classes: For the Fall 2020 semester, USC policy requires that all classes conducted online be recorded for asynchronous viewing with transcriptions made available. Recordings ensure that all classes are ADA compliant, and can be freely accessed at all times by students irrespective of the region or time zone they are studying from. Students are responsible for the appropriate use and handling of these recordings under existing SCampus policies regarding class notes (<https://policy.usc.edu/scampus-part-c/>). You are not permitted to create your own class recordings without the instructor's permission. Violations of these policies will be met with the appropriate disciplinary sanction.

Due Dates/Make Up Work: Exams must be taken as scheduled. Assignments are due as scheduled. Make-ups will be allowed only if the student has contacted the professor before the due date, detailing a serious problem. Make-up exams should be scheduled before the next instruction session and cannot be taken before the scheduled exam. There is no late submission for in-class exercises.

Online Communication Policy: Students are encouraged to contact the instructor by USC email and schedule a meeting during office hours. In the subject line, indicate the course number and very brief summary of the email. Simple questions will be answered by email, but for more complex discussions students may be instructed to schedule a zoom meeting. We will do our best to respond to your emails within 24 hours. We will be less responsive on the weekends or during holidays.

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://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://usc.edu/student-affaris/SJACS/> Information on intellectual property at USC is available at: <http://usc.edu/academe/acsen/issues/ipr/index.html>.

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 your course instructor (or TA) as early in the semester as possible. DSP is located in STU 301 and is open from 8:30am to 5:00pm, Monday through Friday. Website and contact information for DSP

http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html
 (213)740-0776(Phone), (213)740-6948(TDD only), (213)740-8216(FAX),
ability@usc.edu

USC technology rental program: We realize that attending classes online and completing coursework remotely requires access to technology that not all students possess. If you need resources to successfully participate in your classes, such as a laptop or internet hotspot, you may be eligible for the university’s equipment rental program. To apply, please submit an application on <https://studentbasicneeds.usc.edu/resources/technology-assistance/>.

USC Technology Support Links:

Zoom information for students (<https://itservices.usc.edu/zoom/>)
 Blackboard help for students (<https://studentblackboardhelp.usc.edu/>)
 Software available to USC Campus (<https://software.usc.edu/>)

Grading:

I. Letter Grades Table:

96-100	A	75-79	C+
91-95	A-	70-74	C
87-90	B+	65-69	C-
84-86	B	60-65	D+
80-83	B-	56-60*	D

* Grades less than 56: F

The final grade will be based on the above table combined with the cluster analysis of all the students’ grades. Which will be explained in details on the first class session.

II. The final course grade will be determined based on the following weights:

Midterm Exam	25 %
Final Exam.	25 %
Homework/Case Studies	20 %
Team Chapter Presentations	20 %
Participation/in-class exercises.....	10 %
Peer Evaluation	*

According to USC policy: “No student is allowed to retake a final examination or do extra work in a course after the semester has ended for purposes of improving his/her grade.” https://arr.usc.edu/forms/ARR_Grade_%20Handbook.pdf

*Peer Evaluation will be reflected in the final team presentation grade and the participation grade

Exams: Exams consist of true/false, multiple choice, short answers and essay questions. If you cannot take an exam on the scheduled date and time, you must provide documents from a responsible party (doctor, court, police, etc.) and you must arrange to take the exam before the following class meeting. The final exam date/time is set USC and cannot be rescheduled.

Assignment Submission: Homework descriptions will be posted on blackboard and assignments are due at the beginning of the class and should be submitted online through Blackboard. Electronic submission must be in MS Office formats. Your presentations can be of any format you deem appropriate.

NOTE:

Course materials and grades will be posted on Blackboard System. Please make sure that you have access to the blackboard and your **USC account** is up and running.

Due to administrative processes, **this syllabus is subject to change**. It is the **student's responsibility** to verify with the instructor regarding any updates.

Tentative Course Outline¹:

Week of		Topics	Assignments
01	Aug 17	Introduction and Logistics of the course Principles of Quality Management	-
02	Aug 24	History of Lean operations Sec. 1: Long Term philosophy	-
03	Aug 31	Case Study: Quality Awards and Certifications Sec. 2: Right process, Right results (Part I and II)	HW1² – Team Presentation (09/01)
04	Sep 7	Sec. 2: Right process, Right results (Part III and IV) Case Study: One-piece-flow and Pull system Case Study: Leveling & Poka Yoke	-
05	Sep 14	Sec. 2: Right process, Right results (Part V) Case Study: Standardized work & Technology adaptation	Homework 2
06	Sep 21	Sec. 3: Add value to the Org. by developing people & partners	-
07	Sep 28	Sec. 4: Continuous problem solving & organizational learning Case Study: Lean Supply Chain	-
08	Oct 5	Exam Review <u>October 8 – Exam 1</u>	Homework 3
09	Oct 12	Team 1 Presentation - Ch2: Principles of Six Sigma Team 2 Presentation - Ch3: Six Sigma project organization, selection and definition	-
10	Oct 19	Ch4: Process Measurement Case Study: Process Mapping	-
11	Oct 26	Team 3 Presentation - Ch5: Applying Statistical Analysis in Six Sigma Team 4 Presentation - Ch6: Process Improvement	Homework 4
12	Nov 2	Ch7: Process Control	-
13	Nov 9	Team 5 Presentation - Ch8: Design for Six Sigma Team 6 Presentation - Ch9: Implementing Six Sigma	Homework 5
Thursday November 19		<u>Final Exam (11 am-1 pm³)</u> - Mandated by USC Schedule	

In-class Work and Class Discussions:

Students will complete work assigned during class time, such as small group assignments, open-notes quizzes, and polls that count towards their in-class work grade. Case studies will be presented at the end of each topic (given the time availability) as an in-class group exercise. Each team will read a case and present it briefly. The questions associated with each case will be discussed in the class by all the students. There is no late submission for in-class exercises. Most activities are designed as group exercises; however, no credit will be given to team members who miss the exercises. Credit will be given for thoughtful completion. The lowest two scores on in-class work will be dropped.

¹ Schedule may be revised to accommodate the content and pace of the class learning process. Due dates and case studies are subject to change.

² Check Blackboard submission links for the due date and assignment instructions

³ **Confirm the time and date of the exam on the USC website.**

Team Chapter Presentation:

Our goal is to enhance your learning experience, by “flipping” the classroom for a small portion of the course. According to the Accreditation Board of Engineering and Technology (ABET), one of the most important qualities of a good engineer is the ability to read, research, reduce and present a topic to a specific audience.

The teams will work on the topic presented in their assigned section of the textbook and their presentation should include both the book content and also the discussion of the topic based on team research or personal experiences. The teams’ performance will be evaluated on the content of the presentation, presentation style and professionalism, and the ability to engage the students in the presentation and the following Q&A. The team should prepare at least three Questions/Answers at the end of the presentation. These questions should reflect the summary of the presentation and your own analysis and criticism.

Criteria	%	Excellent
Content of the presentation	70	<ul style="list-style-type: none"> • Covering the main topics discussed in the book chapter • Relating the topics to course material discussed in lectures • Supplemental external research included in the presentation • Providing relevant and informative examples
Presentation style and professionalism	15	<ul style="list-style-type: none"> • Professional slides (Fonts, format, etc.) • Presentation style • Team members’ participation in the presentation • Multimedia and other creative approaches to presentation
The ability to engage the students	15	<ul style="list-style-type: none"> • Q&A • Using case studies and other creative approaches to engage the students

Peer Evaluation and Final Grade: All team members will receive equal grades, contingent to team members’ confirmation of their participation, however each member has a chance to evaluate the other members at the end of the semester. Peer Evaluation will be reflected in the final Term Project grade and the participation grade. Please note that if you fail to submit your peer evaluation on time, you will not receive any points towards your own evaluation.

Criterion (Assign 0 to 5 for each criterion)		Name			
		Team Member 1	Team Member 2	Team Member 3	Team Member 4
1	Ability to communicate effectively: listening and talking with respect				
2	Willingness to help others				
3	Creativity in performing the tasks assigned				
4	Ability to offer solutions and accept constructive criticism				
5	Spend time and work hard to finish the project				
6	Availability and flexibility				
Total Points/5					

Netiquette Rules for Class

Netiquette is network etiquette; a set of rules that encourages appropriate and courteous online behavior.

- Above all, show respect to your peers and the instructor.
- Respect the opinions of others, regardless of how much you disagree.
- If you are writing an email or discussion post in anger, the content of your text will probably come off as disrespectful. Give yourself time to calm down and show respect.
- Reflect kindness and concern for your colleagues, you never know when someone else is having the worst day of their life.
- Allow others to save face. When possible, allow others the option of coming to the same conclusion, rather than pushing an opinion or answer on them. Instead of saying, “That’s not right, it should be purple,” consider saying this instead, “Would purple be a better color in this situation?”
- Address your instructor with their full title (e.g. Professor or Dr.) unless they explicitly tell you otherwise.
- Let others know how you would like to be addressed and address others as they would like to be addressed.
- Limit your use of the exclamation point.
- Avoid using all caps. IT IS COMMONLY INTERPRETTED AS YELLING.
- Humor is difficult to interpret text-based communication. Consider avoiding it in professional and academic communication.
- Check your spelling and grammar before hitting send or submit. This is an academic community and part of being professional is checking and double-checking your work.
- Use professional language and avoid using social media language and characters (i.e. don’t use slang, text shortcuts, such as “u” instead of “you,” emojis, emoticons).
- Use appropriate fonts.
- Use appropriate font size: 12 font for papers (you can use 10 for tables); 11 or 12 in emails or discussion board posts.
- In emails, be brief. After greetings, put the most important point in the first sentence. Do not make the reader get halfway (or all the way) through the email before you present the reason for the email.
- In the discussion board, expand on your thoughts. Explain why you agree with them or why you think it’s a great post.
- Give details to your discussion post. What was your source and what pages were you looking at?

A more comprehensive list of communication norms is posted on the course page on Blackboard.

Statement on Academic Conduct and Support Systems

Academic Conduct: Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

Support Systems:

Counseling and Mental Health - (213) 740-9355 – 24/7 on call

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention. studenthealth.usc.edu/counseling

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week. suicidepreventionlifeline.org

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL), press “0” after hours – 24/7 on call

Free and confidential therapy services, workshops, and training for situations related to gender-based harm. studenthealth.usc.edu/sexual-assault

Office of Equity and Diversity (OED) - (213) 740-5086 | Title IX – (213) 821-8298

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. equity.usc.edu, titleix.usc.edu

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity | Title IX for appropriate investigation, supportive measures, and response. usc-advocate.symplicity.com/care_report

The Office of Disability Services and Programs - (213) 740-0776

Support and accommodations for students with disabilities. Services include assistance in providing readers/note takers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs. dsp.usc.edu

USC Campus Support and Intervention - (213) 821-4710

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student. campussupport.usc.edu

Diversity at USC - (213) 740-2101

Information on events, programs and training, the Provost’s Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students. diversity.usc.edu

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible. dps.usc.edu, emergency.usc.edu

USC Department of Public Safety - UPC: (213)740-6000, HSC: (323)442-120 – 24/7 on call

Non-emergency assistance or information. dps.usc.edu