

**University of Southern California**  
**ISE 327 – Six Sigma and Lean Operations**  
MW 2-3:20 pm – KAP 145

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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, 2<sup>nd</sup> 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

**Course Expectations and Policies:**

***Course Expectations:*** 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.

***Attendance Policy:*** It is expected that students will attend class and participate in the class discussion throughout the semester.

***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.

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

**Classroom Access:** 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 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.

**Electronic Device Policy:** You are allowed to use electronic devices to access your text, retrieve information, and take notes. However, you are not allowed to use social media and the like during class.

**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](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](mailto:ability@usc.edu)

**Grading procedure and Assessment Methods:**

I. Letter Grades Table:

94-100	A	73-77	C+
89-94	A-	68-73	C
85-89	B+	65-68	C-
80-85	B	60-65	D+
77-80	B-	56-60*	D

\* Grades less than 56: F

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

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

Exam 1 .....	22.5 %
Exam 2 .....	22.5 %
Final Exam ..	25 %
Homework .....	15 %
Participation/Case Studies*	15 %

\* Subjective grading by the Instructor based on the student's participation in class discussions (specially case studies presented in the class) and interaction with TA/Instructor inside and outside the classroom.

***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. You are encouraged to submit your assignments online. Electronic submission must be in MS Office formats. Your presentations can be of any format you deem appropriate.

***Study Hints:***

- Do not hesitate to ask questions in person during office hours or via email.
- Read the text before you come to each class meeting.
- Participate in class discussions.

**Case Studies and Class Discussions:**

Case studies will be presented at the end of each topic 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.

**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 Outline<sup>1</sup>:

Week of		Topics	Project / Assignments
01	Jan 7	Introduction and Logistics of the course <b>Ch1:</b> The foundation of Six Sigma	
02	Jan 14	<b>Ch2:</b> Principles of Six Sigma	
03	Jan 21	<i><b>January 21 - Martin Luther King's Day – University Holiday</b></i> <b>Ch3:</b> Six Sigma project organization, selection and definition	<i>Assignment due: HW1</i>
04	Jan 28	<b>Ch4:</b> Process Measurement	
05	Feb 4	<b>Ch5:</b> Process Analysis	<i>Assignment due: HW2</i>
06	Feb 11	<i><b>February 11 – Exam 1</b></i> <b>Ch6:</b> Process Improvement	
07	Feb 18	<i><b>February 18 – President's day – University Holiday</b></i> <b>Ch7:</b> Process Control	<i>Assignment due: HW3</i>
08	Feb 25	<b>Ch8:</b> Design for Six Sigma	
09	March 4	History of Lean operations	<i>Assignment due: HW4</i>
10	March 11	<i><b>Spring Recess</b></i>	
11	March 18	<b>Sec. 1:</b> Long Term philosophy <i><b>March 20 – Exam 2</b></i>	
12	March 25	<b>Sec. 2:</b> Right process, Right results (part I)	
13	April 1	<b>Sec. 2:</b> Right process, Right results (part II)	<i>Assignment due: HW5</i>
14	April 8	<b>Sec. 3:</b> Add value to the Org. by developing people & partners	
15	April 15	<b>Sec. 4:</b> Continuous problem solving & organizational learning	<i>Assignment due: HW6</i>
16	April 22	Lean Six Sigma Final Review	
<i>Monday, May 6</i>		<i><b><u>Final Exam (2-4 pm)</u></b> - Mandated by USC Schedule</i>	

<sup>1</sup> Schedule may be revised to accommodate the content and pace of the class learning process.