**Class timing and location**

* Monday and Wednesday: 11:00 to 12:20 PM (Pacific time zone)
* OHE136 (campus students)

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| **Instructor:** Dr. Thomas C. Booth  **Office:** 309  **Office Hours:** Monday and Wednesday 9:00 to 10:30 AM  **Email:** [Tbooth@USC.edu](mailto:Tbooth@USC.edu)  **Office phone** (213) 740-0867 (office hours) | **Course producer:** Prithi Dominic Savio  **Office:** TBD  **Office hours:** TBD  **Email:** pdominic@usc.edu |

**Text**: Evans and Lindsay, Managing for Quality and Performance Excellence, Ed.10, ISBN:978-1305662544

**Course Description**: We will compare and contrast the philosophical frameworks advocated by quality experts such as Deming, Juran, and Crosby. We will examine the role of leadership and strategic planning in quality improvement, and how the use of measurements will lead to quality and business performance improvements. We will learn the basics of quality tools and methods from the perspective of a manager, which will include six sigma, statistical thinking, tools for process improvement such as process mapping, and statistical process control. Through a team project, students will be exposed to elements of industrial quality systems including manufacturing plans, QFD, validation tests, FMEA, PFMEA, and gage repeatability and reproducibility. The teams will create a quality system and an ISO 9000 quality manual for a small business, and do a desk-top audit of another team’s quality manual..

**Learning objectives**: In this course, the student will learn how to develop, deploy and maintain quality practices that assure marketplace acceptance of the products and services provided by a company. The course intent is to provide a knowledge base such that the student will be comfortable with modern quality practices in a company and able to effectively apply quality principles as a manager or high-performing contributor.

**Pre-requisites**: Basic statistics and probability\*

**Course website:** courses.uscden.net (desire2learn software)

**Course Notes:** Lecture notes will be posted on the course Desire2Learn/Blackboard site.Configuration management will be used (indicated by Rev1, etc. in the file name) to indicate any updates.

**Supplementary materials:**

* Course specific notes “The Mathematics of Quality” will be posted on the course web site for more in-depth information on some of the concepts reviewed in the course. \*This will include some basic concepts of probability.
* An examination study guide will be posted on the course web site to help the students focus as they study their lecture notes and the text book in preparation for examinations.

**Technological Proficiency and Hardware/Software Required:** Student should be familiar with Excel.

**Assignments**

* Team project: each student will participate on a project team. The teams will envision a small business to make and sell a product, and create a quality system for the business. The quality system is comprised of

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | Business plan | 8 | Assembly instructions |
| 2 | Drawing and BOM | 9 | Validation test |
| 3 | Manufacturing concept | 10 | FMEA |
| 4 | Preliminary design review | 11 | PFMEA |
| 5 | Balanced scorecard | 12 | Design review |
| 6 | Manufacturing plan | 13 | QFD (levels 2 to 4) |
| 7 | QFD (level 1) | 14 | ISO 9001-2008 quality manual |

* Audit: each team will do a desk-top audit of another team’s quality manual
* Quiz: there will be a quiz after completing most of the chapters. The quizzes are not announced in advance, and may be at the beginning or end of the class period.
* Team participation: grading will be determined based on a 360 degree assessment
* **Examinations:**

Mid-term exam: Students may bring a single sheet of paper with crib notes on both sides

Final examination.

* 1. The first part will be a take-home exam, in which the student will solve one or more problems based on techniques described in the text. These may include SPC, sample size, gage R&R, etc.
  2. The second part, in class, will be comprehensive. Students may bring a single sheet of paper with crib notes on both sides

**Grading Breakdown**: The course grade will be based on the following:

|  |  |  |
| --- | --- | --- |
|  | Campus | DEN |
| Mid-term exam | 20% | 25% |
| Quality system team project | 35% | 35% |
| Class participation and quizzes | 10% | 0% |
| Team participation | 5% | 5% |
| Final exam | 30% | 35% |

**Assignment Submission policy**: Assignments may not be turned in past the deadline unless there is a prior agreement with the professor.

**Quality and Timeliness Expectations**

No late work will be accepted.

All work shall have cover page with:

1. Your name

2. Your team member names with last names in alphabetical order

3. Document title

4. Document date

5. File name must conform to the following: team# \_assignment#.tbd

**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 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. Website and Contact information for DSP: (213) 740-0776 (Phone), (213) 740-6948 (TDD only), (213) 740-8216 (FAX) [ability@usc.edu](mailto:ability@usc.edu).

DSP website: <http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html>,

**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, ([www.usc.edu/scampus](http://www.usc.edu/scampus) or <http://scampus.usc.edu>) contains the University Student Conduct Code (see University Governance, Section 11.00), while the recommended sanctions are located in Appendix A. 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/.