

ISE 426 Statistical Quality Control  
Fall Semester 2022  
Tu,Th 2:00 - 3:20pm  
Room: KAP 148  
Web Site: blackboard.usc.edu

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Hours: W 2:30 - 4:00pm  
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Prerequisite: ISE 225 Engineering Statistics I

**Objective:** In this course, you will develop the skills necessary to decide whether or not bulk delivered services and products are of acceptable quality, to investigate the suitability of a process for performance of a given task, and to identify opportunities for immediate performance improvement. You will learn appropriate methods of data analysis using statistical software. You will also be introduced to the philosophy of quality management and briefed on the state of quality assurance initiatives in the international marketplace.

**Text:** Montgomery, Introduction to Statistical Quality Control, 8<sup>th</sup> edition

**Course Material:** primarily Parts 1, 3, and 6 of the text, plus topics discussed in lecture by the Instructor, see Reading Assignments below

**Grading Policies:**

Points Breakdown -

Homework	120
Midterm Exam #1	130
Midterm Exam #2	130
Project	<u>120</u>
Total	500

Course GRADES will be determined by the distribution of point totals for the class. “Natural groupings” will be used to assign letter grades. The highest scoring group will receive A’s, the next group is the B’s, and so on. A single point will not be the difference between any two letter grades. A “gap” must exist to create a grade boundary.

HOMEWORK assignments will be due on the following Thursdays:

**September 8, 15, 22; October 6, 20, 27; November 3, 17**

Late homework will be accepted until 5:00pm on the Friday following the original due date.

Homework will be graded on an “all or nothing” basis. If a paper shows an answer to each assigned exercise that uses approximately the correct method, the grade for the assignment is 15 points. If any exercise is unacceptable, the paper will be returned with no points awarded. Completions of returned assignments will be accepted for full credit until 5:00pm on the Friday after the assignment is returned to the class.

MIDTERM EXAMS will be given on each of the following dates:

**Thursday, September 29 and Thursday, November 10**

Each exam will cover the material presented up to and including the preceding homework assignment. Points will be assigned to each section of the exam. Partial credit will be awarded according to work shown. No re-takes will be allowed. No make-up exam will be given.

A PROJECT will be due on the following date:

**Thursday, December 1**

The project will involve Measurement Capability Analysis and will require data collection during a laboratory session. For this project, you will work in pairs. The project assignment will be distributed about two or three weeks in advance of the due date.

Reading Assignments:

Week	Topic	Text Sections
1	Define Quality, Single Sampling	1.1, 15.1, 15.2
2	Double Sampling	15.3.1
3	Sampling Standards, Variables Plans	15.4, 15.5, 16.1
4	Variables Plans (cont.)	16.2, 16.3
5	Six Sigma, Basic Tools, Causes of Variation	2.1 thru 2.7, 5.4, 5.7, 5.2, 5.3.1
6	Control Chart Layout	5.3.2, 5.3.3, 5.3.4
7	Reading Control Charts	5.3.5, 5.3.6, 5.3.7, 6.2.4
8	Control Chart Construction	6.1, 6.2 (omit pp. 224-228, 230-233)
9	Chart of Individuals	6.4 (omit 6.4.1)
10	Process Capability	8.1, 8.3, 8.4, 8.5
11	Measurement Capability	8.8.1, 8.8.2
12	Attribute Charts	7.2 (omit 7.2.5), 7.3.1, 7.3.2, 7.3.4, 7.3.5
13	Cusum and EWMA charts	9.1.1 thru 9.1.3, and 9.2.1 thru 9.2.4
14	Quality Management Deming, Juran, ISO 9000	Handouts

**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”

<https://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, <http://policy.usc.edu/scientific-misconduct>.

**COVID-19 Statement:**

In keeping with University policy, all students are required to engage in appropriate behavior to protect the health and safety of our community. If you feel ill or are unable to come to class or complete class assignments due to issues related to COVID-19, including but not limited to: testing positive yourself, feeling ill, caring for a family member with COVID-19, or having unexpected child-care obligations, contact the instructor immediately.

**Intellectual property policies:**

This is a clarification that any misuse, inappropriate dissemination, or attempted sale of class recordings and handouts, as well the appropriation of intellectual property, is not acceptable. It is a student’s responsibility to abide by the appropriate use and handling of these recordings under existing campus policies regarding class notes (<https://policy.usc.edu/scampus-part-c/>). Students are not permitted to create their own class recordings without the instructor’s permission. Violations of these policies will be met with the appropriate disciplinary sanction.

**Support Systems:**

*The Office of Student Accessibility Services*

Provides certification for students with disabilities and helps arrange relevant accommodations.

<http://osas.usc.edu>

*Student Counseling Services (SCS) - (213) 740-7711 – 24/7 on call*

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

*National Suicide Prevention Lifeline - 1-800-273-8255*

Provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week. <http://www.suicidepreventionlifeline.org>

*Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-4900 - 24/7 on call*

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

<https://engemannshc.usc.edu/rsvp/>

*Sexual Assault Resource Center*

For more information about how to get help or help a survivor, rights, reporting options, and additional resources, visit the website: <http://sarc.usc.edu/>

*Office of Equity and Diversity (OED)/Title IX Compliance – (213) 740-5086*

Works with faculty, staff, visitors, applicants, and students around issues of protected class.

<https://equity.usc.edu/>

*Bias Assessment Response and Support*

Incidents of bias, hate crimes and microaggressions need to be reported allowing for appropriate investigation and response. <https://studentaffairs.usc.edu/bias-assessment-response-support/>

*Student Support and Advocacy – (213) 821-4710*

Assists students and families in resolving complex issues adversely affecting their success as a student EX: personal, financial, and academic. <https://studentaffairs.usc.edu/ssa/>

*Diversity at USC*

Information on events, programs and training, the Diversity Task Force (including representatives for each school), chronology, participation, and various resources for students. <https://diversity.usc.edu/>

*USC Emergency Information*

Provides safety and other updates, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible, <http://emergency.usc.edu>

*USC Department of Public Safety – 213-740-4321 (UPC) and 323-442-1000 (HSC) for 24-hour emergency assistance or to report a crime.*

Provides overall safety to USC community. <http://dps.usc.edu>