

ISE 225 Engineering Statistics I  
Fall Semester 2018  
Tu,Th 2:00 - 3:20 pm  
Room: KAP 148  
Web Site: blackboard.usc.edu

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Prerequisite: ISE 220 Probability Concepts in Engineering

Objective: In this course, you will develop the skills necessary to gather data that is representative of the phenomenon that you intend to study, to describe the uncertainty in scientific results, and to draw valid conclusions in the face of uncertainty.

Text: Montgomery, Runger, and Hubele, Engineering Statistics, 5<sup>th</sup> edition

Course Material: Chapters 1-7 of the text, plus topics discussed in lecture by the instructor

Grading Policies:

Points Breakdown -	
Homework	120
Project	120
Exam #1	130
Exam #2	<u>130</u>
Subtotal	500
Final Exam	150

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:

**August 30; September 6, 13; October 4, 11, 25; November 1, 8**

Late homework will be accepted until noon 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 noon on the Friday after the assignment is returned to the class.

A PROJECT will be due on the following date:

**Thursday, October 18**

The project will involve data collection and analysis to investigate a scientific claim. For this project, you will work with an assigned partner. The project assignment will be distributed about two or three weeks in advance of the due date.

An EXAM will be given on each of the following dates:

**Thursday, September 20 and Tuesday, November 20**

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. If you miss an exam, you must take the final exam.

The FINAL EXAM is scheduled for **Thursday, December 6, at 2:00-4:00**. It will be comprehensive and will be graded similarly to the other exams. A student may elect to omit the final exam, if both exams and the project have been completed.

Reading Assignments:

Week	Topic	Text Sections
1	Survey Sampling techniques, Descriptive Statistics	1-2 and Handout, 2-1, 2-2, 2-3, 2-4, 2-5
2	Point Estimation	4-1, 4-2, and Handout
3	Confidence Intervals	4-4.5 and 4-4.6
4	Hypothesis Testing	4-3 and 4-4
5	Inference for a Mean with Variance Unknown	4-5
6	Inference for a Variance, Goodness of Fit, Probability Plots	4-6 and 4-10, 3-6
7	Two-Sample Problems	5-1, 5-2, 5-3, 5-4
8	Single-Factor ANOVA	5-5, 5-8.1, and Handout
9	Blocking	5-8.2
10	Two-Factor Experiments	7-1, 7-2, 7-7
11	Simple Linear Regression	6-1 and 6-2
12	Multiple Regression	6-3
13	Multiple Regression (cont.)	6-4
14	Inference for a Proportion	4-7
15	Inference for Several Proportions	5-6 and Handout

**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>.

**Support Systems:**

*The Office of Disability Services and Programs*

Provides certification for students with disabilities and helps arrange relevant accommodations. <http://dsp.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>