

CE93: ENGINEERING DATA ANALYSIS FALL 2013

Lectures: TuTh 9-10AM, 534 Davis
Lab session 101: Wed 1-3 PM, 345 Davis
Lab session 102: Wed 3-5 PM, 345 Davis

Catalog Description: Application of the concepts and methods of probability theory and statistical inference to Civil and Environmental Engineering (CEE) problems and data; graphical data analysis and sampling; elements of set theory; elements of probability theory; random variables and expectation; simulation; statistical inference. Applications to various CEE problems and real data will be developed by use of MATLAB and existing codes. The course also introduces the student to various domains of uncertainty analysis in CEE.

Prerequisites: E7. No credit will be given after taking Stat25. Basic knowledge of MATLAB is essential for this course.

Units: 3

Course Objective: Introduce the student to the concepts and methods of probability theory and statistical inference by way of their application to CEE problems and real data. Hands-on graphical and computational methods, using MATLAB, will be emphasized. The course also serves to introduce the student to a variety of CEE problems and data through their statistical/probabilistic analysis.

Required Textbook and Reading Material:

Ross, S.M., *Probability and Statistics for Engineers and Scientists, Fourth Edition*. Academic Press, Burlington, MA, 2009.

Homework: Weekly assignments will be posted at the website. See the course calendar for due dates and times. Homework assignments can be submitted either electronically or in hard copy. Solutions to the homework will also be posted on the website. Late homework will **not** be accepted.

Lab: Lab assignments and instructions will be posted on the website. Lab assignments should be completed and submitted electronically before the indicated deadline.

Exams: There will be two midterm exams and one final exam. See the course calendar for the dates.

Grading: 15% homework, 15% lab assignments 20% midterm 1, 20% midterm 2, 30% final examination. In computing semester grades, one homework set and one lab solution with lowest grades will be dropped before weight-averaging.

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See website for GSI office hours and contacts.