

University of Southern California

CE 408: Risk Analysis in Civil Engineering

Fall 2013

Instructor: [Roger Ghanem](mailto:ghanem@usc.edu)(ghanem at usc.edu)

Office Hours: KAP 254C, Tu: 1pm-1:45pm and 3:30pm-5:00pm **and** by appointment

Teaching Assistant: [Vahid Keshavarzadeh](#)

Office Hours: KAP 239, 2-4pm and during the discussion section

Textbook: A.H-S. Ang and W.H. Tang, *Probability Concepts in Engineering* John Wiley and Sons (ISBN: 9780471720645).

Software: **R** : <http://www.r-project.org/>

Class Meets in THH 208, 2:00-3:20pm Tu,Th.

Discussion Sessions:

Tu 5pm-5:50pm in KAP 145

Th 3:30pm-4:20pm in WPH 207

Grading:

10% Homeworks

15% First Exam (in class on Sep 24)

15% Second Exam (in class on Oct 22)

15% Third Exam (in class on Nov 19)

10% Essays

35% Final Exam (December 9th; 11-1pm)

Homeworks:

This course has weekly homeworks due in class on Tuesday of every week. Late homeworks will not be graded. Homeworks will be graded for neatness in addition to technical content. Solutions to homeworks will be posted at this website on the day they are due.

Syllabus:

Week	Topic/Chapters	Homework	Additional Solved Problems	Additional Interesting Problems
1 (Aug 27, 29)	Fundamentals of Probability Models: Chapter 1; 2.1-2.2	INSTALL R ON YOUR COMPUTER	Introduction to R	Other Manuals
2 (Sep 3, 5)	Fundamentals of Probability: 2.3; Analytical Models: 3.1			
3 (Sep 10, 12)	Probability Models: 3.2			
4 (Sep 17, 19)	Probability Models: 3.3			
5 (Exam 1, Sep 26)	Functions of Random variables			
6 (Oct 1, 3)	Statistical Inference: 6.1-6.3			
7 (Oct 8, 9)	Statistical Inference: 6.4-6.5			
8 (Oct 15, 17)	Determination of Probability Models: 7.1-7.2			
9 (Exam 2, Oct 24)	Determination of Probability Models: 7.3-7.4			
10 (Oct 29, 31)	Regression and Correlation Analysis: 8.1-8.2			
11 (Nov 5, 7))	Regression and Correlation Analysis: 8.3-8.4			
12 (Nov 12, 14)	Regression and Correlation Analysis: 8.5-8.6			
13 (Exam 3, 21)	Bayesian Analysis: 9.1-9.3			
14 (Nov 26)	Bayesian Analysis: 9.4-9.5			
15 (Dec 3, 5)	Bayesian Analysis: 9.6			

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