ISE 225 ENGINEERINGSTATISTICS - Fall 2015

Th, 2 – 5 p.m., Room SAL 126

Professor: Cesar Acosta
Office: GER 216
Office hours: TBD
e-mail : acostame@usc.edu

Teaching Assistant: Lunce Fu
Office: TBD
Office hours: TBD
e-mail : luncefu@usc.edu

Textbook: *Introductory Statistics*, S. M. Ross, 3 ed., 2010
Pre-requisites: ISE 220

Course Objectives: This course is an introduction to the Statistical Analysis of problems involving data from multiple random variables, where one –the response- is related to a set of variables – the predictors – so that useful statistical models can be designed to predict the relation between the predictors and the response. Such models are commonly referred to as linear models. When the set of predictors includes continuous and/or categorical random variables they are known as analysis of variance models. When the set of predictors includes only continuous random variables they are known as linear regression models. This course is an introduction to the design and analysis of these models. It starts with a brief review of statistical inference, as it is the building block for the analysis of the models covered in this course.

Course Outline

Week	Topic	Book	Exams
1	Data sets	Ch. 2, 3	
2	Sampling distributions, point estimation	Ch. 7, Sec. 8.1 – 8.4	
3	Test for the mean	Sec. 9.1 - 9.4	
4	Test for the variance	class notes	
5	Tests for two populations	class notes	
6	Confidence Intervals, Prediction Intervals	Sec. 8.5 – 8.7, class notes	
	Midterm 1		Oct 10
7	Nonparametric inference	Ch. 14	
8	Single factor ANOVA	Sec. 11.1 – 11.2	
9	Factorial experiments with two factors	Sec. 11.3 - 11.4	
10	2^k factorial experiments	class notes	
	Midterm 2		Mar 26
11	Simple linear regression (SLR) – estimation	Sec. 12.1 – 12.4	
12	Inference, prediction and diagnostics	Sec. 12.5 – 12.10	
13 - 14	Multiple linear regression (MLR) matrix approach	Sec. 12.11, class notes	
	Final Exam		Dec 10

Grading Policy:
Homework 20%
Midterms 25%
Final Exam 30%

Academic Integrity. The Viterbi School of Engineering adheres to the University's policies and procedures governing academic integrity as described in SCampus (www.usc.edu/dept/publications/SCAMPUS/). Students are expected to be aware of and to observe the academic integrity standards described in SCampus, and to expect those standards to be enforced in this course.

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 301and is open 8:30 a.m. - 5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776