

## Syllabus

### FALL 2007 ISE 220 PROBABILITY CONCEPTS IN ENGINEERING

#### **Contact Information:**

Class Hours: M, Wed, Fri: 12 - 12:50

Room: GFS 101

Instructor: Sheldon Ross

Office: GER 235A

Office Hours: W-F: 10:30 - 11:30 or by appointment

Phone: (213) 821-1377

Email: smross@usc.edu

TA: Samim Ghamami

TA Office: GER 309

TA Office Hours: M: 10-12

TA Phone:

TA Email: ghamami@usc.edu

**Textbook:** A First Course in Probability, 7th ed., Sheldon Ross, Prentice-Hall, 2006

**Course Objectives:** To familiarize students with the concepts and ideas of probability so as to be able to effectively utilize them when analyzing industrial and systems engineering models. To give students needed preparation for future courses. To develop an intuitive feel for probability.

#### **Course Outcomes:**

An understanding of and ability to effectively use counting principles.

An understanding of and facility in utilizing conditional probability.

Understanding the concept of random variables.

Familiarity with the distributions and moments of random variables.

Knowledge of common discrete and continuous random variables.

Ability to find distributions of functions of random variables.

Ability to compute expectations of random variables.

Understanding of joint distributions

Familiarity with the Normal random variable.  
Ability to apply the Central Limit theorem.

### **Instruction Course Material**

Counting Principles: 1 week  
Axioms of Probability: 1.5 weeks  
Conditional Probability: 2.5 weeks  
Discrete Random Variables and Expectation: 2.5 weeks  
Continuous Random Variables: 3 weeks  
Jointly Distributed Random Variables: 1.5 weeks  
Properties of Expectation: 2 weeks  
Limit Theorems: 2 weeks

**Grading Policy:** Based on homework, two midterm exams, and final exam, with following percentages:

20 percent: Homeworks  
20 percent: Midterm exam 1  
20 percent: Midterm exam 2  
40 percent: Final exam

**Academic Integrity:** The Viterbi School of Engineering adheres to the University's policies and procedures governing academic integrity as described in 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 301 and is open 8:30 a.m. - 5:00 p.m., Monday through Friday. The phone number for DSP is (213)740-0776.