

**STA 3533, Spring 2003**  
**Probability and Random Processes**

**Instructor:** Dr. Ming-Ying Leung  
Office: SB 4.01.22  
Phone: 458-5535  
Email: mleung@utsa.edu  
<http://helix.utsa.edu/~leung/teaching>

**Office Hours:** TR 11:00 – 11:30 a.m., 2:00 - 3:00 p.m. or by appointment.

**Course Objectives:** To introduce probability concepts to Electrical Engineering students as needed for applications in signal processing, communication systems, and information theory.

**Scope:** This course will cover basic probability, discrete and continuous distributions, joint distributions, expected values, covariance, correlation, transformations of random variables, limit theorems, autocorrelation and autocovariance for random processes, power spectra and response of linear systems to random inputs. Examples from electrical engineering are included.

**Text:** Probability and Random Processes for Electrical Engineering, 2<sup>nd</sup> edition  
by Alberto Leon-Garcia.

**Prerequisite:** EE 3423 and either EE 2323 or MAT 3253.

**Syllabus:**

Chapter 1:	Probability Models.
Chapter 2:	Basic Concepts of Probability Theory, sections 2.1, 2.2, 2.4 - 2.7.
Chapter 3:	Random Variables, sections 3.1 - 3.6, 3.9.
Chapter 4:	Multiple Random Variables, sections 4.2 - 4.4, 4.7.
Chapter 5:	Sums of Random Variables, sections 5.1 - 5.3.
Chapter 6:	Random Processes, sections 6.1 - 6.4.
Chapter 7:	Analysis and Processing of Random Signals, sections 7.1, 7.2.

**Grading:**

Homework:	20%	(Due in class about every Thursday)
Class exercises:	10%	(Group work in class)
Test I:	20%	(In class Thursday, Feb 20, 2003)
Test II:	20%	(In class Thursday, Apr. 3, 2003)
Final Exam.	30%	(10:30 a.m. – 1:15 p.m., Wednesday, May 7, 2003)

**NO MAKEUP EXAM** will be given except for emergency or medical reasons. In such cases, the student should submit a written request accompanied by official documents to arrange for a makeup test. **Overdue assignments** will only be accepted for a good reason. However, the instructor reserves the right to discount part or all of the credit for any late homework.

**LAST DAY TO DROP** an individual course and receive a grade W is March 14, 2003.

