**Department of Electrical and Computer Engineering**

**Florida International University, Miami, FL. 33199**

**Fall 2014 Dr. Jean Andrian**

**Course**: EEL 5543 Random Signal Principles

**Prerequisite**: Understanding of calculus, linear algebra, convolutions, Fourier transforms

**Text**: Probability and Stochastic Processes: A Friendly Introduction for Electrical and Computer

Engineers, 2nd Ed.

**Contact Info**: EC 3913, 348-2115

**Office Hours**: MW 12:00 – 14:00

**Class Time**: MW 17:00 – 18:15

**Class Objectives**

To understand the theory and appreciate the use of probability, random variables and stochastic processes in the

context of engineering.

**Topics to Learn**

1. Sets and probability – conditional probability and Bayes theorem.

2. Single random variables – CDF, PDF.

3. Operations and transformations on one random variable – expectation, moments.

4. Multiple random variables and operations on them.

5. Random processes – stationarity, independence, correlations.

6. Spectral characteristics of random processes – power density and autocorrelation.

7. Linear systems with random inputs

8. Applications

**Reading The Text**

The text being used is the best I’ve seen for presenting this material. I will basically be helping you to understand the text. The best way to learn probability is to read this text and work out many problems!

**Homework**

Homework assigned will NOT be collected. Any questions on the homework (or variations thereof) may be given

as an exam question regardless of whether or not the topic has been covered in class. Working out as many

problems as possible is the best way to learn this material. *Homework problems will be assigned in class*.

**Grades** 3 Tests 33 % each (they will not be cumulative)

Test 1 September 24

Test 2 October 22

Test 3 December 8th

**Extra Credit** These assignments will be given throughout the semester and help towards your final grade.

Your final grade is out of 100 points. This gives the following grade scale:

A = 95 – 100 C = 73 − 75

A- = 90 – 94 C- = 70 − 72

B+ = 86 – 89 D+ = 66 − 69

B = 83 – 85 D = 63 − 65

B- = 80 – 82 D- = 60 − 62

C+ = 76 – 79 F = 0 – 59