ELEG3143 Probability and Stochastic Process
Course Syllabus

General Information:

Instructor: Jingxian Wu
Email: wuj@uark.edu
Office Hour: Tu. Th. 10:00-11:00
Lecture location: Bell 2273

Office: Bell 3168
Phone: (479) 575-6584

Lecture: Tu. Th. 11:00-12:15

Required Material:

- Textbook: R. D. Yates and D. Goodman, Probability and Stochastic Processes: A Friendly Introduction for Electrical and Computer Engineers, 3rd Edition, Wiley, 2014.
- Software: Matlab

Reference:

- S. M. Ross, Introduction to Probability Models, 9th Ed., Academic Press, 2007. (optional)
- A. Papoulis and S. U. Pillai, Probability, Random Variables and Stochastic Processes, 4th Ed., McGraw Hill, 2002. (optional)
- G. R. Cooper and C. D. McGillem, *Probabilistic Methods of Signal and System Analysis*, 3rd Ed., Oxford University Press, 1999. (optional)

Prerequisites:

System and Signal Analysis, Calculus I & II

- Knowledge of integration and differentiation
- Knowledge of algebra
- Familiar with Fourier transform and Laplace transform
- Knowledge of linear time invariant system

Learning Objectives:

Probability, random variables, stochastic processes, auto correlation, power spectral density, systems with random inputs in the time and frequency domain, and applications.

Grading:

- Test 1 23%
- Test 2 23%
- Test 3 23%
- Homework 23%
- Quiz 8%

- A: $90 \leq \text{grade} \leq 100$
- B: $80 \leq \text{grade} < 90$
- C: $70 \leq \text{grade} < 80$
- D: $60 \leq \text{grade} < 70$
- F: $0 \leq \text{grade} < 60$

- All homework need to be uploaded to blackboard.
- Due dates for homework will be strictly enforced. Late submission within one week after due date will receive a 20% grade deduction, and no credit if submitted after one week from the due date.
- There will be NO make up for quizzes.
- If for some legitimate reason (sickness, death in the family, etc.), you cannot take a **test** on the scheduled day, you must notify the instructor **prior** to the exam.

Online Resources:

- Course materials (Slides, Homework, Labs, References, etc) can be found at https://wuj.hosted.uark.edu/teaching/eleg3143/eleg3143.html

- Please check course website **at least once per week** for updates.

Academic Honesty: Each University of Arkansas student is required to be familiar with and abide by the University's 'Academic Integrity Policy' which may be found at http://provost.uark.edu/
Students with questions about how these policies apply to a particular course or assignment should immediately contact their instructor.

Tentative Schedule:

- Week 1 (1/15, 1/17): Ch.1 Introduction to Probability
- Week 2 (1/22, 1/24): Ch. 1 Introduction to Probability
- Week 3 (1/29, 1/31): Ch. 1 Introduction to Probability
- Week 4 (2/5, 2/7): Ch. 2 Discrete Random Variables
- Week 5 (2/12, 2/14): Ch. 2 Discrete Random Variables
- Week 6 (2/19, 2/21): Ch. 3 Continuous Random Variables (**Test 1 on 2/21**)
- Week 7 (2/26, 2/28): Ch. 3 Continuous Random Variables
- Week 8 (3/5, 3/7): Ch. 4 Multiple Random Variables
- Week 9 (3/12, 3/14): Ch. 4 Multiple Random Variables
- Week 10 (3/19, 3/21): **Spring Break**
- Week 11 (3/26, 3/28): Ch. 4 Multiple Random Variables
- Week 12 (4/2, 4/4): Ch. 5 Elements of Statistics (**Test 2 on 4/4**)
- Week 13 (4/9, 4/11): Ch. 5 Elements of Statistics
- Week 14 (4/16, 4/18): Ch. 6 Stochastic Process
- Week 15 (4/23, 4/25): Ch. 6 Stochastic Process
- Week 16 (4/30, 5/2): Ch. 6 Stochastic Process (dead day: 5/3)
- **Test 3 at the Final week**

The above schedule is subject to change without prior notice.