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.
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Online Resources:

- Course materials (Slides, Homework, Labs, References, etc) can be found at http://comp.uark.edu/~wuj/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 (1/16, 1/18): Ch.1 Introduction to Probability
- Week 2 (1/23, 1/25): Ch. 1 Introduction to Probability
- Week 3 (1/30, 2/1): Ch. 1 Introduction to Probability
- Week 4 (2/6, 2/8): Ch. 2 Discrete Random Variables
- Week 5 (2/13, 2/15): Ch. 2 Discrete Random Variables
- Week 6 (2/20, 2/22): Ch. 3 Continuous Random Variables (**Test 1 on 2/22**)
- Week 7 (2/27, 3/1): Ch. 3 Continuous Random Variables
- Week 8 (3/6, 3/8): Ch. 4 Pairs of Random Variables
- Week 9 (3/13, 3/15): Ch. 6 Sum of Random Variables
- Week 10 (3/20, 3/22): **Spring Break**
- Week 11 (3/27, 3/29): Ch. 6 Sum of Random Variables (**Test 2 on 4/3**)
- Week 12 (4/3, 4/5): Ch. 7 Parameter Estimation using the Sample Mean
- Week 13 (4/10, 4/12): Ch. 7 Parameter Estimation using the Sample Mean
- Week 14 (4/17, 4/19): Ch. 10 Stochastic Process
- Week 15 (4/24, 4/26): Ch. 10 Stochastic Process
- Week 16 (5/1, 5/3): Ch. 7 Stochastic Process (dead day: 5/4)
- **Test 3 at the Final week**

The above schedule is subject to change without prior notice.