ELEG 310 - Random Signals and Noise

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Course Description

ELEG 310 is an introductory course to the basic concepts of probability theory, the mathematical discipline for analyzing and modeling uncertain outcomes. We will cover Chapters 1–8 of the textbook, which include the following topics: methods of counting (combinatorics), axioms of probability, conditional probability and independence, discrete (integer-valued) random variable, continuous (real-valued) random variables, jointly distributed random variables, properties of expectations, limit theorems.

Prerequisite

Basic understanding of calculus and set theory.

Textbook

- Main Textbook: Sheldon Ross, A First Course in Probability, 10th edition, Pearson, 2019.
- Reference: Charles Boncelet, Probability, Statistics, and Random Signals, Oxford University Press, 2016.

Evaluation

• Homework: 30%; Midterm: 30%; Final Exam: 40%