IE 241: Engineering Statistics I (TR 10:30 -11:45)

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Course Overview

Introduction to probability

- axioms, properties, counting rules, conditional probability, independence

Random variables and probability distribution

- discrete random variables, (binomial, hypergeometric, negative binomial, geometric, Poisson, etc.)
- continuous (normal, exponential, gamma, beta, etc.)
- moments, moment generating function
- transformation of a random variables

Joint probability distribution

- moments, conditional distributions, transformations, order statistics

Sampling distribution

- central limit theorem

Estimation

- Maximum likelihood estimation
- Rao-Blackwell theorem

Prerequisite

A good algebra and calculus background is crucial to be successful in this course.

Textbook (Required)

- Wackerly et al., Mathematical Statistics with Applications, 7th edition
- You are expected to read the corresponding part of the textbook to the lecture.

Grading

- The course grade will be based on: Attendance (10%), Homework (15%), Midterm (35%), Final (40%)
- Attendance will be checked on a sporadic basis, at the beginning of a class meeting. Students with two or more unexcused absences will receive zero credit.)
- There will be approximately eight homework assignments. Some homework will count more than others. A strikingly similar homework (to each other, or from unauthorized use of solution manual) will be given a zero without warning.
- Final exam is comprehensive, meaning that all material from the course will be covered.
- No cheat sheets will be allowed for exam.

Note

- This is a fast-paced, demanding course. Be ready to spend more time on this course than usual. It will be rewarding!
- Using a laptop is prohibited.
- Please refrain from excessive cell phone usage, as it can be disruptive to the instructor and other students.

*** Anything in this syllabus is subject to change at the discretion of the instructor. ***