ZHS 163 TTh 2 – 3.20 p.m.

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Textbook: Fundamentals of Probability With Stochastic Processes 4th Ed., S. Ghahramani, 2018, ISBN 9781498755092
Pre-requisites: MATH 126 Calculus II (MATH 226 recommended)

Course Objectives: This is an introductory course to the fundamental concepts of probability (sample space, probability of events, conditional probabilities, random variables, expected values, variances, common random variables). No previous background of probability and statistics is required. This calculus-based course shows how to apply these concepts to industrial and systems engineering problems.

Course Outline

Week	Topic	Book	Exam
1	Combinatorial Methods	Ch. 2	
2	Axioms of probability, Probability of equally likely events	Ch. 1	
3	Conditional probability, Law of total probability (LTP)	Ch. 3	
4	Independent events, Bayes rule, applications	Ch. 3	
5	Midterm 1		Feb 11
6	Random Variables, PMF, CDF of discrete random variables	Ch. 5	
7	Discrete Binomial, Geometric and Poisson random variables	Ch. 5	
8	Expected Value and Variance	Ch. 5	
9	Continuous random variables, PDF, CDF, expectation, variance	Ch. 6	
10	Uniform, Normal, Exponential and Gamma variables	Ch. 7	
11	Midterm 2		Mar 29
12	Jointly distributed (multivariate) random variables	Ch. 9	
13	Marginal and conditional distributions	Ch. 9	
14	Covariance, independence and sums of random variables	Ch. 10	
15	Central limit theorem (CLT), Normal approximation to Binomial	Ch. 11	
	Final Exam		May 11

Grading Policy:
Quizzes 24%
Midterms 24%
Final Exam 28%

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Students with Disabilities. Any Student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible. DSP is located in STU 301and is open 8:30 a.m. - 5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776