

**Department of Statistics & Operation Research
King Saud University
Stat 324 – Probability and Statistics for Engineers**

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Syllabus (Course Outline)

Week	Sections	Subjects
1	1.1, 1.3, 1.4	Introduction to Statistics & Data Analysis
2	2.1, 2.2, 2.3, 2.4, 2.5	Sample Space, Events, Counting Sample Points (only Theorem 2.8), Probability of an Event, Additive Rules
3	2.6, 2.7, 2.8	Conditional Probability, Independent Events, Multiplicative Rules, Bayes' Rule
4	3.1, 3.2, 3.3	Concept of Random Variable, Discrete Probability Distributions, Continuous Probability Distributions
5	4.1, 4.2, 4.3, 4.4	Mean of a Random Variable, Variance, Means & Variances of a Linear Combination of Random Variables (for independent variables), Chebyshev's Theorem
6	5.2, 5.3, 5.4, 5.6	Discrete Uniform Distribution, Binomial Distribution, Hypergeometric Distribution, Poisson Distribution
7	6.1, 6.2, 6.3 6.4	Continuous Uniform Distribution, Normal Distribution, Areas Under the Normal Curve, Applications of the Normal Distribution
8	6.6, 8.1, 8.2	Exponential Distribution, Random Sampling
9	8.4, 8.5, 8.7	Sampling Distributions, Sampling Distribution of Means, t-Distribution
10	9.1, 9.2, 9.4, 9.5	Introduction to Estimation, Statistical Inference, Estimating the Mean, Standard Error
11	9.7, 9.9, 9.10	Estimating the Difference Between Two Means, Estimating a Proportion, Estimating the Difference between Two Proportions
12	10.1, 10.2	Statistical Hypotheses, Testing a Statistical Hypothesis
13	10.3, 10.5, 10.7	One- and Two-Tailed Tests, Tests Concerning a Single Mean, Tests on a Single Mean when variance is unknown
14	10.8, 10.11, 10.12	Tests on Two Means, Test on a Single Proportion, Test on two Proportions
15		Reviews

Textbook

Probability and Statistics for Engineers and Scientists, 7th Edition (or Latest Edition), Prentice Hall, 1998.

By: Walpole, R. E.; Myers, R. H. and Myers, S. L.

Grading:

Participation + Quizzes + Home works + Attendance + Tutorial Session	Midterm I	Midterm II	Final Exam
10%	25%	25%	40%
The attendance will be considered in BOTH lectures and tutorial session.	Ch 1, 2, 3, & 4	Ch 5 & 6	Ch. 8, 9, & 10

Homework and exam policy:

Collaboration on homework assignments is encouraged. You may consult outside reference materials, other students, the instructor, or anyone else. There is one restriction: you must write, type, or record your answers yourself, alone, so that your homework reflects your understanding. No late homework or make-up exams without prior approval.

Preliminary Course Outline:

We will cover Walpole, Chapters 1–6 and Chapters 8–10.