

Week	Sections	Subjects
1	1.1, 1.3, 1.4	Introduction to Statistics & Data Analysis
	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
2	2.6, 2.7, 2.8	Conditional Probability, Independent Events, Multiplicative Rules, Bayes' Rule
	3.1, 3.2, 3.3	Concept of Random Variable, Discrete Probability Distributions, Continuous Probability Distributions
3	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
	5.2, 5.3, 5.4, 5.6	Discrete Uniform Distribution, Binomial Distribution, Hypergeometric Distribution, Poisson Distribution
4	6.1, 6.2, 6.3, 6.4	Continuous Uniform Distribution, Normal Distribution, Areas Under the Normal Curve, Applications of the Normal Distribution
	6.6, 8.1, 8.2,	Exponential Distribution, Random Sampling, Some Important Statistics
5	8.4, 8.5, 8.7	Sampling Distributions, Sampling Distribution of Means, t-Distribution
	9.1, 9.2, 9.4, 9.5	Introduction to Estimation, Statistical Inference, Estimating the Mean, Standard Error
6	9.7, 9.9, 9.10	Estimating the Difference Between Two Means, Estimating a Proportion, Estimating the Difference between Two Proportions
	10.1, 10.2,	Statistical Hypotheses, Testing a Statistical Hypothesis
	<b>Midterm Examination</b>	
7	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
	10.8, 10.11, 10.12	Tests on Two Means, Test on a Single Proportion, Test on two Proportions
8	11.1, 11.2	Simple Linear Regression, Properties of the Least Squares Estimation
	11.3, 11.4	Inference Concerning the Regression Coefficients, Correlation

**Textbook:** *Probability and Statistics for Engineers and Scientists*, Walpole, R. E.; Myers, R. H. and Myers, S. L., 6-th or 7-th edition, Prentice Hall, 1998.

## **Grading**

Participation, Lab., Quizzes & Homework	10%
Midterm	30%
Final Exam	60%

## **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 otherwise record your answers yourself, alone, so that your homework reflects your understanding. No late homework or make-up exams without prior approval; penalties may apply.

## **Preliminary Course Outline**

We will cover Walpole, Chapters 1–11.