MATH 332/532
Mathematical Statistics

Course Outline

Topics	# of Weeks
Statistics and Sampling Distribution Theory (Chapter 6) Statistics and Their Distributions. The Distribution of the Sample Mean. The Distribution of a Linear Combination. Distributions Based on a Normal Random Sample.	2.0
Point Estimation (Chapter 7) Some General Concepts of Point Estimation. Methods of Point Estimation. Sufficiency. Information and Efficiency.	4.0
Statistical Intervals Based on a Single Sample (Chapter 8) Basic Properties of Confidence Intervals. Large-Sample Confidence Intervals for a Population Mean and Proportion. Intervals Based on a Normal Population Distribution. Confidence Intervals for the Variance and Standard Deviation of a Normal Population. Bootstrap Confidence Intervals.	2.0
Tests of Statistical Hypotheses Based on a Single Sample (Chapter 9) Hypotheses and Test Procedures. Tests About a Population Mean. Tests Concerning a Population Proportion. P-Values. Some Comments on Selecting a Test Procedure.	2.5
Inferences Based on Two Samples (Chapter 10) Z Tests and Confidence Intervals for a Difference between Two Population Means. The Two-Sample t Test and Confidence Interval. Analysis of Paired Data. Inferences about Two Population Proportions. Inferences about Two Population Variances. Comparisons Using the Bootstrap and Permutation Methods.	2.5
Tests	1.0

Textbook: Modern Mathematical Statistics with Applications (with CD-ROM), 1st Edition
by Jay L. Devore and Kenneth N. Berk

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