

**MATH 332/532**  
**Mathematical Statistics**

**Course Outline**

Topics	# of Weeks
<b>Statistics and Sampling Distribution Theory (Chapter 6)</b> 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
<b>Point Estimation (Chapter 7)</b> Some General Concepts of Point Estimation. Methods of Point Estimation. Sufficiency. Information and Efficiency.	4.0
<b>Statistical Intervals Based on a Single Sample (Chapter 8)</b> 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
<b>Tests of Statistical Hypotheses Based on a Single Sample (Chapter 9)</b> 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
<b>Inferences Based on Two Samples (Chapter 10)</b> 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
<b>Tests</b>	1.0

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

Revised: Fall 2007