

Math 563 – Statistics

Course Description from Bulletin: Theory of sampling distributions; interval and point estimation, sufficient statistics. Bayesian procedures, hypothesis testing, nonparametric methods. (3-0-3)

Enrollment: Elective for AM and other majors.

Textbook: John A. Rice, Mathematical Statistics and Data Analysis, 3rd Edition, Duxbury, 2006.

Other required material: None

Prerequisites: MATH 475

Objectives: Students will learn

1. the concept of statistical inference and the difference between population characteristics and sample estimates,
2. the probabilistic basis for statistical inference,
3. how to correctly perform statistical tests,
4. nonparametric methods and methods for large data sets,
5. how to use statistical software to facilitate the calculations involved.

Lecture schedule: 3 50 minute (or 2 75 minute) lectures per week

Course Outline:	Hours
1. Introduction	3
2. Estimates	9
3. Hypothesis testing	11
4. Nonparametric Statistics	6
5. Regression and nonparametric curve fitting	10
6. Bayesian inference	6

Assessment:	Homework	10-30%
	Project	10-20%
	Tests	20-50%
	Final Exam	30-50%

Syllabus prepared by: Fred Hickernell and Andre Adler

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