

## MATH 116 – Introduction to Statistics II

**Catalog description:** Nonparametric methods, linear regression and correlation, analysis of variance.

**Prerequisite:** grade of C or higher in MATH 115 or consent of instructor.

**Schedule:** Spring of odd-numbered years. 3 credit hours.

**Textbook:** Graybill, Iyer, and Burdick. *Applied Statistics: A First Course in Inference*, 1st ed. Prentice Hall.

**General Goals:** MATH 116 is designed as a follow-up to MATH 115 - Introduction to Statistics. In MATH 115, the focus is on data analysis, collecting data, and an introduction to statistical inference. MATH 116 reviews the basic components of inference (population, sample, sampling distribution, confidence), and then covers a variety of inferential problems, including inference about a single mean or population, the comparison of two groups (proportions or means), simple linear regression, two-way contingency tables, and the comparison of multiple means (analysis of variance). The class will focus on the basic concepts behind each of these inferential methods and the implementation of these methods in statistical computer packages such as Minitab.

### List of topics:

Chapter 1. Data and Statistical Methods, Sections 1.1, 1.2, 1.3

Chapter 2. Populations, Variables, Parameters, and Samples, Sections 2.1 - 2.5.

Chapter 3. Confidence Intervals for a Population Proportion, Sections 3.1, 3.2

Chapter 6. The Normal Population, Sections 6.1 - 6.3

Chapter 8. Statistical Tests, Sections 8.1 - 8.2

Chapter 9. Simple Linear Regression, Sections 9.1 - 9.5

Chapter 10. Comparing Population Proportions; Contingency Tables, Sections 10.1- 10.3

Chapter 11. Comparing Population Means. Sections 11.1 - 11.3

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