

# Statistical Methods (3)

(Effective Fall 2018)

**Prerequisite:** Math 210 or Engr 311.

**Catalog Description:** Basic probability distributions, fundamentals of statistical inference, hypothesis testing, one way classification, analysis of variance, covariance, use of variance components, and their estimation, comparative experiments, multiple comparisons, and regression.

**Goal:** Prepares the students majoring in the mathematical sciences for careers involving Statistics.

**Learning Outcomes for Major:** This course addresses one or more of the student learning outcomes for the major.

Upon completion of his/her degree from the University of Tennessee at Martin with a major in mathematics, the graduate will be able to:

- i. apply mathematical concepts and principles to perform numerical and symbolic computations.
- ii. use technology appropriately to investigate and solve mathematical and statistical problems.
- iii. write clear and precise proofs.
- iv. communicate effectively in both written and oral form.
- v. demonstrate the ability to read and learn mathematics and/or statistics independently.

**Teaching Objectives:** The student will:

1. Be able to perform traditional hypothesis tests and nonparametric alternatives.
2. Test Population Variances.
3. Perform Analysis of Variance.
4. Perform Chi-Square Goodness of Fit and Independence and Homogeneity tests.

**Text(s):** An Introduction to Statistical Methods and Data Analysis, Seventh Edition, Ott & Longnecker, Cengage Learning, 2015. ISBN: 978-1305269477.

**Outline:**

Chapter	Title (Sections)
6	Inferences Comparing Two Populations Central Values
7	Inferences About Population Variances
8	Inferences about More than Two Population Central Values
9	Multiple Comparisons
10	Categorical Data
11	Linear Regression and Correlation
	Various other Topics Selected by the Instructor

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