

*Montgomery College - Department of Mathematics
Rockville Campus*

**MA116 – Elements of Statistics
3 Semester Hours**

Description

An introductory non-calculus statistics course to serve a variety of students who need a working knowledge of statistics. Descriptive analysis and treatment of data, probability and probability distributions, statistical inference, linear regression and correlation, chi-square, and some nonparametric statistics

MA116 meets 3 hours each week.

Prerequisites

A grade of C or better in MA 101 or MA 103, appropriate score on mathematics assessment test, or consent of department.

Assessment levels: EN 101/101A, RD 120.

Topics

- I. Describing, Exploring and Comparing Data
 1. Design of Experiments
 2. Frequency Distributions
 3. Measures of the Center
 4. Measures of Variation
 5. Measures of Relative Standing
 6. Exploratory Data Analysis
- II. Probability
 1. Assigning Probabilities
 2. Rules
 3. Binomial Distributions
 4. Normal Distributions
 5. Sampling Distributions and Estimators
 6. The Central Limit Theorem
- III. Estimates and Sample Sizes
 1. Estimating a Population Proportion
 2. Estimating a Population Mean
- IV. Hypothesis Testing
 1. Testing a Claim about a Proportion
 2. Testing a Claim about a Mean

- V. Inferences from Two Samples
 - 1. Inferences about Two Proportions
 - 2. Inferences about Two Means
 - 3. Inferences from Matched Pairs
- VI. Correlation and Regression
- VII. Chi-Square Distribution
- VIII. Nonparametric Statistics
 - 1. Sign Test or Rank Sum Test

Understandable Statistics, by Brase & Brase, 9th Edition, Houghton Mifflin, 2009.

Text

Or

Basic Practices of Statistics, 4th Ed., Moore, VHP/S/Freeman.