

*Montgomery College - Department of Mathematics
Takoma Park/Silver Spring 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. Normal Distributions
 - 4. Sampling Distributions and Estimators
 - 5. 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

Text

Elementary Statistics Picturing the World, 3rd Edition by Larson and Farber. Prentice-Hall Publishing Company.