
ASHEVILLE-BUNCOMBE TECHNICAL COMMUNITY COLLEGE
MATHEMATICS DEPARTMENT
COMMON SYLLABUS DIRECTORY

PREFIX: MAT **NUMBER:** 151 **TITLE:** Statistics I

CONTACT HOURS: 3 **CREDIT HOURS:** 3

CCL DESCRIPTION: This course provides a project-based approach to the study of basic probability, descriptive and inferential statistics, and decision making. Emphasis is placed on measures of central tendency and dispersion, correlation, regression, discrete and continuous probability distributions, quality control, population parameter estimation, and hypothesis testing. Upon completion, students should be able to describe important characteristics of a set of data and draw inferences about a population from sample data. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

PREREQUISITE(S): MAT 080 or MAT 090

TEXTBOOK: Triola, Elementary Statistics Using Excel, 4th Edition.
ISBN: 0-321-56496-0

DELIVERY METHOD: Both Traditional with Web Support and Online are available.

GRADING POLICY: Traditional Delivery: Homework (20%)
Chapter Tests and Project (60%)
Midterm Exam 1 (10%), Midterm Exam 2 (10%)

COMMENTS: Any policy concerning the possible acceptance of a late assignment or the possibility of a special arrangement that might be made with the student who missed a scheduled examination due to circumstances beyond his/her control is left to the discretion of the instructor.

- 1.1 Review and Preview
- 1.2 Statistical Thinking
- 1.3 Types of Data
- 1.4 Critical Thinking
- 1.5 Collecting Sample Data
- 1.6 Introduction to Excel
- 2.1 Review and Preview
- 2.2 Frequency Distribution
- 2.3 Histograms
- 2.4 Statistical Graphics
- 2.5 Critical Thinking: Bad Graphs
- 3.1 Review and Preview
- 3.2 Measures of Center
- 3.3 Measures of Variation
- 3.4 Measures of Relative Standing and Boxplots
- 4.1 Review and Preview
- 4.2 Fundamentals of Probability
- 4.3 Addition Rule
- 4.4 Multiplication Rule: Basics
- 4.5 Multiplication Rule: Complements & Conditionals
- 4.6 Probabilities Through Simulation
- 4.7 Counting
- 5.1 Review and Preview
- 5.2 Random Variables
- 5.3 Binomial Probability Distributions
- 5.4 Mean, Variance, and Standard Deviation
- 6.1 Review and Preview
- 6.2 The Standard Normal Distribution
- 6.3 Applications of the Normal Distribution
- 6.4 Sampling Distributions and Estimators
- 6.5 The Central Limit Theorem
- 6.6 Normal as Approximation to Binomial
- 6.7 Assessing Normality
- 7.1 Review and Preview
- 7.2 Estimating a Population Proportion
- 7.3 Estimating a Population Mean: SD Known
- 7.4 Estimating a Population Mean: SD Unknown
- 7.5 Estimating a Population Variance
- 8.1 Review and Preview
- 8.2 Basics of Hypothesis Testing
- 8.3 Testing a Claim About a Proportion
- 8.4 Testing a Claim About a Mean: SD Known
- 8.5 Testing a Claim About a Mean: SD Unknown
- 8.6 Testing a Claim About Variance
- 10.1 Review and Preview
- 10.2 Correlation
- 10.3 Regression
- 11.1 Review and Preview
- 11.3 Contingency Tables
- 14.1 Review and Preview
- 14.2 Control Charts for Mean and Variation
- 15.1 Projects
- 15.2 Procedures