

OFFICIAL SYLLABUS
STAT 107 – CONCEPTS OF STATISTICS
On-Line Course
(Adopted Summer 2010; Committee: Rigdon, Sewell)

Catalog Description: Basic concepts of descriptive statistics; probability distribution and inferential statistics (estimating parameters and testing hypotheses); sampling, experimental design, correlation and regression, consumer price index. Credit may not be granted for both STAT 107 and STAT 244. Prerequisite: One and one-half years of high school algebra or AD 095.

Textbook: *Statistical Reasoning for Everyday Life* 3rd Edition with MyStatLab, by Bennett, Briggs, and Triola. Published by Pearson.

Course Outline and Topics:

Chapter 1. Speaking of Statistics

- 1.1. What Is/Are Statistics?
- 1.2. Sampling
- 1.3. Types of Statistical Studies
- 1.4. Should You Believe a Statistical Study?

Chapter 2. Measurement in Statistics

- 2.1. Data Types and Levels of Measurement
- 2.2. Dealing with Errors
- 2.3. Uses of Percentages in Statistics
- 2.4. Index Numbers *

Chapter 3. Visual Displays of Data

- 3.1. Frequency Tables
- 3.2. Picturing Distributions of Data
- 3.3. Graphics in the Media
- 3.4. A Few Cautions About Graphics

Chapter 4. Describing Data

- 4.1. What Is Average?
- 4.2. Shapes of Distributions
- 4.3. Measures of Variation
- 4.4. Statistical Paradoxes, 178 *

Chapter 5. A Normal World

- 5.1. What Is Normal?
- 5.2. Properties of the Normal Distribution

5.3. The Central Limit Theorem [cover enough for CIs and Significance Tests]

Chapter 6. Probability in Statistics

6.1. The Role of Probability in Statistics: Statistical Significance

6.2. Basics of Probability

6.3. Probabilities with Large Numbers

6.4. Ideas of Risk and Life Expectancy *

6.5. Combining Probabilities *

Chapter 7. Correlation and Causality

7.1. Seeking Correlation

7.2. Interpreting Correlations

7.3. Best-Fit Lines and Prediction

7.4. The Search for Causality

Chapter 8. From Samples to Populations

8.1. Sampling Distributions

8.2. Estimating Population Means

8.3. Estimating Population Proportions

Chapter 9. Hypothesis Testing

9.1. Fundamentals of Hypothesis Testing

9.2. Hypothesis Tests for Population Means

9.3. Hypothesis Tests for Population Proportions

Any instructor should cover all of the material specified, except the starred chapters (also in gray font) which are optional.