Stats 1CC3 Course Description

Textbook:

Elementary Statistics: A Step by Step Approach (5^{th} edition) by Allan G. Bluman

Chapters Covered:

1.2
2.2, 2.3, 2.4, 3.2
3.3, 3.4, 3.5
4.2, 4.3, 4.4, 4.5, 4.6
Appendix B.2
5.2, 5.3, 5.4, 5.5, 6.2, 6.3, 6.4, 6.5, 6.6
7.2, 7.3, 7.4
8.2, 8.3, 8.4, 8.5
9.2, 9.6
10.2, 10.3, 10.4

Topics Covered:

- ✧ Frequency Distribution and Graphs:
  - ◆ Organizing Data: Categorical and Grouped Frequency Distributions
  - ◆ Histograms, Stem and Leaf Plots

- ✧ Data Description
  - ◆ Measures of Central Tendency
  - ◆ Measures of Variation
  - ◆ Measures of Position
  - ◆ Exploratory Data Analysis

- ✧ Probability and Counting Rules
  - ◆ Sample Spaces and Probability
  - ◆ The Addition Rules for Probability
  - ◆ The Multiplication Rules and Conditional Probability
  - ◆ Counting Rules
  - ◆ Probability and Counting Rules

- Discrete Probability Distributions
  - Probability Distributions
  - Mean, Variance, and Expectation
  - The Binomial Distribution
  - The Poisson Distribution
  - Bayes' Theorem

- The Normal Distribution
  - Properties of Normal Distribution
  - The Standard Normal Distribution:
    -- Finding Areas under the Standard Normal Distribution Curve;
    --The Normal Distribution Curve as a Probability Distribution Curve
  - Applications of the Normal Distribution
  - The Central Limit Theorem
  - The Normal Approximation to the Binomial Distribution

- Confidence Intervals and Sample Size
  - Confidence Intervals for the Mean
  - Confidence Intervals and Sample Size for Proportions

- Hypothesis Testing
  - Steps in Hypothesis Testing: Traditional Method
  - z Test for a Mean
  - t Test for a Mean
  - z Test for a Proportion
  - p-values

- Testing the Difference Between Two Means, Two Variances, and Two Proportions
  - Testing the Difference Between Two Means: Large Samples
  - Testing the Difference Between Two Proportions

- Correlation and Regression
  - Scatter Plots
  - Correlation:

--Correlation Coefficient;

--The Significance of the Correlation Coefficient;

Correlation and Causation

- Regression:

  --Line of Best Fit;

  --Determination of the Regression Line Equation