

**Union County Educational Services Commission**  
**High School Course Syllabus**

**Title:** Probability and Statistics

**Timeline:** Full Year; 5 Credits

**Course Description:**

This course introduces students to the methods used in the field of applied statistics using mathematical models. Emphasis is given to concepts and techniques for collecting, analyzing, representing data, drawing conclusions, and making predictions. The major focus of this course is to provide students with experience in measures of location and dispersion, correlation, and regression. Students will use multiple representations to present data including written descriptions, numerical statistics, formulas, and graphs. Students will work with independent and dependent events, random variables, conditional probability, binomial and geometric distributions.

**Scope and Sequence:**

- I. Introduction to Statistics
- II. Analyzing Categorical Data
- III. Displaying, Comparing, and Summarizing Quantitative Data
- IV. Modeling Data Distributions
- V. Exploring Bivariate Numerical Data
- VI. Study Design
- VII. Probability
- VIII. Counting, Permutations, and Combinations
- IX. Random Variables
- X. Sampling Distributions
- XI. One-Sample Confidence Intervals and z and t Significance Tests
- XII. Two-Sample Inference for the Difference Between Groups
- XIII. Inference for Categorical Data
- XIV. Advanced Regression

**Curriculum Alignment:**

New Jersey Student Learning Standards - Mathematics  
Standards for Mathematical Content and Practice

**Grading Procedures:**

Do Now	10%
Participation	20%
Class Assignments	50%
Assessments	20%

**Adoption Date:**