

COURSE DESCRIPTION

AP Statistics is a one-year course about data and probability. The main topics specified by the College Board: exploring data, producing data, probability as the foundation of inference, and making inferences from data. Students will collect and analyze data with calculators and computers, conduct classroom experiments, perform probability simulations and complete statistics projects in spring semester. Students will be able to apply their knowledge of statistics in their chosen fields. The class culminates in the AP Statistics exam. Students who are successful will often receive advance college credit.

Please note: Even though students will be taking the advanced placement exam in May *there will be a final exam in the second semester.*

ESSENTIAL KNOWLEDGE

Upon successful completion of this class, students will be able to:

- Describe distributions of data using numerical and graphical methods
- Compute the mean, median, variance, and standard deviation of a distribution
- Understand and use standard distributions (normal, binomial, geometric)
- Understand correlation and perform least squares regression
- Design samples, surveys, experiments, and simulations
- Know general and conditional probability rules
- Solve problems with discrete and continuous random variables
- Understand statistics as random variables and their distributions
- Know the relationships between sampling and population distributions
- Use the central limit theorem and verify normality
- Determine sample size
- Make one and two sample inferences for means and proportions
- Make confidence interval and margin of error inferences
- Determine P-values and make significance test inferences
- Use Chi-Squared procedures _ testing Goodness of Fit and making inferences
- Make inferences from regression models

TEXT

Yates, Moore, and Starnes, *The Practice of Statistics*, 3rd ed., W.H. Freeman, New York, 2008.

MATERIALS NEEDED DAILY

- Pencil and eraser
 - Notebook (journal)
 - Textbook
 - Graphing calculator (preferably TI-84 plus)
- NOTE: The AP Statistics test requires use of a graphing calculator.