

West Linn–Wilsonville School District

Mathematics – Course Statement

Course Title: Advanced Placement (AP) Statistics

Length of Course: Year
Number of Credits: 1
Grade Level: 10, 11, 12
Prerequisites: Advanced Algebra

Date of Description/Revision: 2013

Course Overview

Advanced Placement (AP) Statistics acquaints students with the major concepts and tools for collecting, analyzing and drawing conclusions from data. Ideas and computation presented in this course have immediate links and connections with actual events. Computers and calculators will allow students to focus deeply on the concepts involved in statistics. The course prepares the student for the AP Exam in statistics.

Essential Questions

Concepts providing focus for student learning

- How do you collect data in order to make inferences?
- What methods do you use in making statistical inference?
- How is the normal curve used to make a statistical inference?
- What is exploratory statistical exploration?

Proficiency Statements

- Upon completion of course, students will be able to:
- Use the various tests: z, t, Chi squared.
 - Conduct a survey.
 - Use exploratory data analysis to prepare a study.
 - Find the z-score, t-score etc.
 - Use simulation techniques.

Common Core Standards for Mathematical Practice

- Students will develop the following practices throughout the course:
- Make sense of problems and persevere in solving them.
 - Reason abstractly and quantitatively.
 - Construct viable arguments and critique the reasoning of others.
 - Model with mathematics.
 - Use appropriate tools strategically.
 - Attend to precision
 - Look for make use of structure.
 - Look for and express regularity in repeated reasoning.

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General Course Topics/Units & Timeframes	
	<ul style="list-style-type: none">A. Exploring data: observing patterns and departures from patterns<ul style="list-style-type: none">- Interpreting graphical displays of distributions of univariate data- Summarizing distributions of univariate data- Comparing distributions of univariate data- Exploring bivariate data- Exploring categorical data: frequency tablesB. Planning a study: deciding what and how to measure<ul style="list-style-type: none">- Overview of methods of data collection- Planning and conducting surveys- Planning and conducting experiments- Generalizing results from observational studies, experimental studies, and surveysC. Anticipating patterns: producing models using probability theory and simulation<ul style="list-style-type: none">- Probability as relative frequency- Combining independent random variables- The normal distribution- Sampling distributionsD. Statistical inference: confirming models<ul style="list-style-type: none">- Confidence intervals- Tests of significance- Special case of normally distributed data
Resources	
	<ul style="list-style-type: none">• Text: <i>Stats: Modeling the World, 3rd Edition</i>, Bock, et. al., Pearson Addison-Wesley, 2010