

Murrieta Valley Unified School District
High School Course Outline
April 2013

Department: Mathematics
Course Title: Advanced Placement Statistics
Course Number: 2410
Grade Level: 11-12
Length of course: Year
Prerequisite: Grade B or better in Math Course 3 or Pre-Calculus

UC/CSU (A-G) REQUIREMENT: C

I. Goals

The student will:

- A. Demonstrate knowledge and understanding of mathematics through written and oral form
- B. Demonstrate knowledge in observing patterns and departures from patterns
- C. Demonstrate the ability to decide what and how to measure data
- D. Demonstrate the ability to produce models using probability theory and simulation
- E. Demonstrate knowledge in statistical inference and confirming models

These goals are aligned with the California Mathematics Framework.

II. Outline of Content for Major Areas of Study

Semester I

- A. Interpret graphical displays of distributions of univariate data (dotplot, stemplot, histogram, cumulative frequency plot)
- B. Summarize distributions of univariate data
- C. Compare distributions of univariate data (dotplots, back-to-back stemplots, parallel boxplots)
- D. Explore bivariate data

- E. Explore categorical data using frequency tables
- F. Identify the methods of data collection
- G. Plan and conduct surveys
- H. Plan and conduct experiments
- I. Generalize the results from observational studies, experimental studies and surveys

Semester II

- A. Utilize probability as a relative frequency
- B. Combine independent random variables
- C. Use the properties of the normal distribution
- D. Apply the Central Limit Theorem to sampling distributions
- E. Use large sample confidence intervals for proportions and means
- F. Use tests of significance
- G. Apply chi-square test for goodness of fit, homogeneity of proportions and independence
- H. Determine when to use special cases of normally distributed data

III. Accountability Determinants

- A. Teacher and textbook generated tests and quizzes
- B. Individual portfolios and projects
- C. Comprehensive final exam

IV. AP Exam Requirement

Students attempting to receive college credit for Advanced Placement and International Baccalaureate courses are required to pass a College Board exam which validates coursework. This exam **is not a requirement** for District High School credit, grade increases, or extra credit.

Student fees are allowable for Advanced Placement and International Baccalaureate Diploma examinations **for college credit**, so long as (1) taking the exam is not a course requirement; (2) the exam results have no impact on a pupil's grade or credit in a course; and (3) eligible economically disadvantaged high school pupils who receive school district funding towards the exam fee shall pay \$5.00 of the fee. (EC sections 52240-52244; 52920-52922.)

V. Required Text

Yates Daniel, Moore, David and McCabe, George *The Practice of Statistics*,
New York, N.Y., W.H. Freeman and Co., 1999.

VI. Supplemental Materials

TI-83 Graphing Calculators

Minilab Software