AP Statistics Syllabus

Overview of AP Statistics

Prerequisite

Students must have successfully completed Enriched Algebra II or Pre-Calculus.

Course Design

AP Statistics introduces the major concepts and tools for collecting, analyzing, and drawing conclusions from data. This course is intended to be equivalent to an introductory non-calculus based college course in statistics. Students do a significant amount of reading and independent projects. A graphing calculator (preferably a TI-83+) is required. The students meet daily for 70 minutes.

Teaching Strategies

Pedagogy

The textbook provides the framework for the course and reading will be required. The students will need to provide 3 observations in each of their readings as evidence that they actually read the assigned passage. This will decrease their reliance on me to provide all of the information and give more time to activities and practice.

Activities will be used to introduce and reinforce topics as well as give them practical experience with Statistics.

Calculators will be used regularly so that data analysis can be less tedious and more time is devoted to patterns, trends, and analyzing data. Also, all students will have experience using Minitab for their much of their data analyses.

Assessment

Each 10-week grading period will consist of approximately 4 tests and an undetermined number of homework assignments.

The weight of each will be about 80% - tests; 20% - homework. A 10-weeks grade is 20% of the final grade.

There is also a semester exam and a final exam, each of which will be 10% of the final grade.

Course Outline

Unit	Time Frame	Topics and Activities
1	9 days	**Exploring Data** • Graphs: stemplots, dotplots, histograms, boxplots • Numerical summaries: mean, variances, standard deviation, range, interquartile range, effects of transformations • Activity, quiz, test
2	9 days	**The Normal Distributions** • Standard Normal Distributions, z-scores • Table and calculator computations • Activity, quiz, test
3	12 days	**Examining Relationships** • Scatterplots • Correlation • Least-squares Regression • Activity, quiz, test, project
4	12 days	**More on Two-Variable Data** • Transformations for regression • Categorical Data • Activity, quiz, test
5	12 days	**Producing Data: Samples, Experiments, and Simulations** • Observational study, census, survey • Simple, systematic, stratified, and probability random samples • Experimental design • Simulation • Activity, quiz, test, project
6	12 days	**Probability: The Study of Randomness** • Sample spaces, events, outcomes • Sum and Product formulas • Disjoint and independent events • Activity, quiz, test
7	9 days	**Random Variables** • Discrete Random Variables • Continuous Random Variables • Means and Variances of random variables • Activity, quiz, test
8	9 days	**The Binomial and Geometric Distributions** • Binomial Distribution • Geometric distribution • Means and variances • Activity, quiz, test • Semester Exam on Units 1-8

Unit	Time Frame	Topics and Activities
9	12 days	**Sampling Distributions** • Sampling distribution for means • Sampling distribution for proportions • Central Limit Theorem • Activity, quiz, test
10	13 days	**Introduction to Inference** • Confidence Intervals • Hypothesis Tests • Power • Activity, quiz, test, project
11	9 days	**Inference for Distributions** • Inference for the mean • Comparing two means • Activity, quiz, test
12	9 days	**Inference for Proportions** • Inference for a Population proportion • Comparing two proportions • Activity, quiz, test
13	10 days	**Inference for Tables: Chi-Square Procedures** • Chi-Square distribution • Goodness of fit • Test of independence • Test for homogeneity • Activity, quiz, test
14	9 days	**Inference for Regression** • Confidence Interval for slope • Hypothesis test for slope and correlation • Activity, quiz, test
	11 days	**AP Exam Preparation** • Topic review • AP question review • Practice AP Test/Final Exam Part I
	13 days	**Final Project** • Present topic to class • Quiz on each topic • Project is Part II of Final Exam