

KAP Statistics Syllabus

Overview of AP Statistics

Prerequisite

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

Course Design

KAP 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 50 minutes.

Important Dates

08/26/08	First day of class
10/24/08	End of 1 st 9-weeks – Last day to drop class without WF
01/13/09	1 st Semester Exam
01/15/09	End of 1 st Semester
03/20/09	End of 3 rd 9-weeks
05/06/09	AP Statistics Test (P.M.)
05/28/09	Final Exam
05/29/09	Seniors last day
06/02/09	Juniors last day

Course Materials

Primary Materials

Yates, Daniel S., David S. Moore, and Daren S. Starnes. **The Practice of Statistics: TI 83/89 Graphing Calculator Enhanced-2nd edition**. New York: W.H. Freeman, 2002.
Supplements for this title include the **Teacher Resource Binder** (“The Golden Resource Binder”).

Supplementary Materials and Additional Resources

AP Statistics Course Description. The College Board

AP Statistics Teacher’s Guide. The College Board

Bock, David E., Paul F. Velleman, Richard D. DeVeaux. **Stats: Modeling the World**. Pearson, Addison Wesley. 2004

Gonick, Larry. Woollcott Smith. **The Cartoon Guide to Statistics**. Harper Resource. 1993

Johnson, Dale M. **Probability and Statistics**. South-Western. 1989

McClave, James T., Frank H. Dietrich II, Terry Sincich. **Statistics – 7th edition**. Prentice-Hall. 1997

Moore, David S. **Statistics: Concepts and Controversies – 5th edition**. W.H. Freeman. 2001

Peck, Roxy, Chris Olsen, Jay Devore. **Introduction to Statistics and Data Analysis – 2nd edition**. Brooks/Cole. 2005

Rossman, Allan J., J. Barr Von Oehsen. **Workshop Statistics**. Springer-Verlag. 1997

Travers, Kenneth J., William F. Stout, James H. Swift, Joan Sextro. **Using Statistics**. Addison-Wesley. 1985

Watkins, Ann E., Richard L. Scheaffer, George W. Cobb. **Statistics in Action**. Key Curriculum Press. 2004

Yates, Daniel S., Daren S. Starnes, David S. Moore. **Statistics Through Applications**. W.H. Freeman. 2005

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 9-week grading period will consist of approximately 4 tests, 4 quizzes, 1 project, and an undetermined number of homework assignments.

The weight of each will be about 50% - tests; 15% - quizzes; 25% - projects; and 10% - homework. A 9-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.

KAP Option

Students this year have the option of taking this course for credit in Math 106 from Kenyon College. This option will take into account the full body of work for the course when receiving credit unlike the AP format where credit hinges on the one test. All students are required to take the AP test with its \$85 fee but they may also sign up for KAP for an additional \$110. Students must fill out an application if they are interested in being a part of the KAP program.

Course Outline
Unit Time Frame

Topics and Activities

Unit	Time Frame	Topics and Activities
1	9 days	<p>Exploring Data</p> <ul style="list-style-type: none"> • Graphs: stemplots, dotplots, histograms, boxplots • Numerical summaries: mean, variances, standard deviation, range, interquartile range, effects of transformations • Activity, quiz, test
2	9 days	<p>The Normal Distributions</p> <ul style="list-style-type: none"> • Standard Normal Distributions, z-scores • Table and calculator computations • Activity, quiz, test
3	12 days	<p>Examining Relationships</p> <ul style="list-style-type: none"> • Scatterplots • Correlation • Least-squares Regression • Activity, quiz, test, project
4	12 days	<p>More on Two-Variable Data</p> <ul style="list-style-type: none"> • Transformations for regression • Categorical Data • Activity, quiz, test
5	12 days	<p>Producing Data: Samples, Experiments, and Simulations</p> <ul style="list-style-type: none"> • Observational study, census, survey • Simple, systematic, stratified, and probability random samples • Experimental design • Simulation • Activity, quiz, test, project
6	12 days	<p>Probability: The Study of Randomness</p> <ul style="list-style-type: none"> • Sample spaces, events, outcomes • Sum and Product formulas • Disjoint and independent events • Activity, quiz, test
7	9 days	<p>Random Variables</p> <ul style="list-style-type: none"> • Discrete Random Variables • Continuous Random Variables • Means and Variances of random variables • Activity, quiz, test
8	9 days	<p>The Binomial and Geometric Distributions</p> <ul style="list-style-type: none"> • Binomial Distribution • Geometric distribution • Means and variances • Activity, quiz, test • Semester Exam on Units 1-8

Unit	Time Frame	Topics and Activities
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9	12 days	<p>Sampling Distributions</p> <ul style="list-style-type: none"> • Sampling distribution for means • Sampling distribution for proportions • Central Limit Theorem • Activity, quiz, test
10	13 days	<p>Introduction to Inference</p> <ul style="list-style-type: none"> • Confidence Intervals • Hypothesis Tests • Power • Activity, quiz, test, project
11	9 days	<p>Inference for Distributions</p> <ul style="list-style-type: none"> • Inference for the mean • Comparing two means • Activity, quiz, test
12	9 days	<p>Inference for Proportions</p> <ul style="list-style-type: none"> • Inference for a Population proportion • Comparing two proportions • Activity, quiz, test
13	10 days	<p>Inference for Tables: Chi-Square Procedures</p> <ul style="list-style-type: none"> • Chi-Square distribution • Goodness of fit • Test of independence • Test for homogeneity • Activity, quiz, test
14	9 days	<p>Inference for Regression</p> <ul style="list-style-type: none"> • Confidence Interval for slope • Hypothesis test for slope and correlation • Activity, quiz, test
	11 days	<p>AP Exam Preparation</p> <ul style="list-style-type: none"> • Topic review • AP question review • Practice AP Test/Final Exam Part I
	13 days	<p>Final Project</p> <ul style="list-style-type: none"> • Present topic to class • Quiz on each topic • Project is Part II of Final Exam