

AP Statistics

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Course Description:

AP Statistics is the high school equivalent of a one semester, introductory college statistics course. Students use a TI-83 or TI-84 graphing calculator, statistical software, and web-based java applets and activities to investigate statistical concepts. To develop effective statistical communication skills, students are required to prepare frequent written and oral analyses of real data.

Course Objectives:

Students will obtain the skills, knowledge, and habits of the mind such that they can produce convincing oral and written statistical arguments which use appropriate terminology in a variety of applied settings; use appropriate technology in solving statistical problems; become critical consumers of published statistical results by heightening their awareness of ways in which statistics can be improperly used to mislead, confuse, or distort the truth; and finally develop essential techniques for producing data (surveys, experiments, observational studies, simulations), analyzing data (graphical and numerical), modeling data (probability, random variables, sampling distributions), and drawing conclusions from data (confidence intervals and significance tests).

Course Requirements:

- Good penmanship
- Reading and Writing skills
- Graphing calculators required (TI-83 or TI-84 recommended)
- Pre-Calculus or AP Calculus passed with B average or better

Course Evaluation:

- Notebook: Each student will be expected to keep this notebook. It will be checked regularly on test days. As part of the notebook score, a journal entry will be completed on a daily basis as assigned by the teacher. Half of the journal points will be a stamp for each entry. Students will receive this stamp daily if they are working on the journal when class begins.
- Assignments: Homework will be inspected regularly. For each assignment a ✓ will be awarded for satisfactory effort to complete all assigned questions. (Note: Do not leave questions blank. Write an explanation of what you understand about the problem and why you are stuck.) A ✓+ may be awarded for exceptional work, and a ✓- may be awarded for incomplete work. Your assignment score will begin as 90/100. A ✓+ will increase the score by 2 and a ✓- will decrease it by 5. *Failure to submit an assignment deducts 10 points from your homework average.* You may pass on two assignments per term and not lose points for them. If you do not use this option by the end of the term, you will receive a 5-point increase for an unused pass, thus bringing your total to 100 if you did all the assignments. **Late work (work not turned in during class) receives an automatic check minus but must be the standard for a check.**
- Quizzes: Take home or reading quizzes will be given regularly.
- Tests: Two tests will be given per term and **ALL will be comprehensive.** They will be formatted similar to AP tests with multiple choice and actual AP free response questions. These are tough tests. There are NO RETAKES, but corrections will be worth half credit. It is expected that you learn from your mistakes by doing these corrections.
- Activities: These occur regularly during class, and can be difficult to make up.
- Investigations: Two investigations per term will require a multi-page write-up and time out of class. The homework passes only apply to homework and cannot be used for these investigations. Late investigations will receive half credit.

Course Grade:

Students' grades will be based on
20% Assignments & Investigations
20% Notebook & Activities
60% Quizzes & Tests

The following grading scale will be used:

		A	93-100%	A-	90-92%
B+	87-89%	B	83-86%	B-	80-82%
C+	77-79%	C	73-76%	C-	70-72%
D+	67-69%	D	63-66%	D-	60-62%

Technology:

Graphing calculators will be used and emphasized in this course as well as statistical software called Minitab (only available in school computer labs). These tools will often do much of the mathematics involved in statistics; however these tools cannot think for you. The numbers mean absolutely nothing without your interpretation of them. You must learn to use them effectively and efficiently to help you solve statistical problems.

Teacher Availability:

I am always at school from 7:30 am to 3:00 pm. I am available to assist my students during these times and often stay later. Students can also contact me by email if unable to come in for assistance, but they should not have unreasonable expectations for my returning the email.

Website:

This site is designed to be a tool for students and parents. Very useful information can be found on my website including: calendars with daily assignments, java applets, AP website, and other valuable web links are provided. I recommend students become acquainted with it.

AP Exam Tips can be found at: http://apcentral.collegeboard.com/apc/members/exam/exam_tips/4073.html



Writing Answers

- 1- Read the problem carefully, and think about the question. Do you know the correct answer? Are you sure? Do not second-guess yourself, but be careful not to jump to conclusions, either. **Write down your conclusion in a single straight forward sentence.**
- 2- What evidence do you find in the problem that supports your answer? **In several sentences at most, provide the details of the problem setting that are relevant**
- 3- Why does the evidence you state support the conclusion? **Using an appropriate statistical concept, show the connection between your evidence and the conclusion you reached.**

Book Assignments

Topic	Section	Page	Problems
Analyzing Categorical Data	1.1	20	9, 14, 16, 18, 24-25
Displaying Quantitative Data with Graphs	1.2	41	38, 40, 45, 48-49, 52-53, 58-60
Describing Quantitative Data with Numbers	1.3	69	80, 82, 84, 88, 91, 96, 98-99, 103, 106
	1.R	76	1-10
Describing Location in a Distribution	2.1	99	2-3, 8-9, 13-14, 20, 22, 24
Density Curves and Normal Distribution	2.2	128	33, 36, 40-41, 43, 45, 51-52, 56, 58, 63
	2.R	136	1-11
Scatterplots and Correlation	3.1	159	2, 4, 9-10, 12, 16-17, 20, 24-25
Least-Squares Regression	3.2	193	36-50(x2), 51, 55, 59, 65
	3.R	202	1-6
Sampling and Surveys	4.1	229	7, 12-13, 17, 22, 30, 35
Experiments	4.2	259	47, 51, 60, 62, 65, 68-69, 72, 76, 80
Using Studies Wisely	4.3	273	97-98, 100, 102, 107, 110, 112-113
	4.R	278	1-11
Randomness, Probability, and Simulation	5.1	300	2, 5, 8-9, 12, 14, 16, 19, 24, 29
Probability Rules	5.2	314	43, 45, 48, 50, 54-56
Conditional Probability & Independence	5.3	333	64, 69, 74-76, 79, 84, 91, 95-96
	5.R	340	1-10
Discrete and Continuous Random Variables	6.1	359	3, 6, 8, 13, 19, 22, 25-26
Transforming and Combining Random Variables	6.2	382	35, 38, 45, 54, 59, 62, 64
Binomial & Geometric Random Variables	6.3	410	73-74, 76, 78, 82, 84, 87, 95-96, 98
	6.R	417	1-8
What Is a Sampling Distribution?	7.1	436	3-7, 10, 12-13, 16, 18-20
Sample Proportions	7.2	447	27, 30, 33-35, 37, 40-41
Sample Means	7.3	462	50, 54, 56-58, 60-62, 64
	7.R	466	1-7
Confidence Intervals: The Basics	8.1	489	1-3, 6, 9, 12-13, 15, 17, 20
Estimating a Population Proportion	8.2	504	27-30, 33-34, 36, 43, 48
Estimating a Population Mean	8.3	527	58-59, 64-65, 68, 71-72
	8.R	532	1-10
Significance Tests: The Basics	9.1	551	1-2, 8-9, 12, 16, 19-20, 23-24
Tests about a Population Proportion	9.2	570	31-34, 40, 43, 46, 48-49, 52, 58
Tests about a Population Mean	9.3	595	66-67, 72, 74-75, 82, 86, 88, 90-91, 93
	9.R	604	1-7
Comparing Two Proportions	10.1	629	2, 5-8, 10, 13, 15, 17, 20, 23-24
Comparing Two Means	10.2	654	32, 34, 37, 40, 43, 46, 52, 54, 56
	10.R	664	1-7
Chi-Square Tests for Goodness of Fit	11.1	693	1, 3, 5, 8, 11-13, 16-18
Inference for Two-Way Table	11.2	724	28-30, 32, 34-36, 41, 43, 47, 50
	11.R	732	1-5
Inference for Linear Regression	12.1	759	1, 4, 6, 8-9, 11, 14, 17-18
Transforming to Achieve Linearity	12.2	785	31, 33, 35, 37, 40, 42, 44-46
	12.R	796	1-6