

AP Statistics Syllabus

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Statistics, like logic and scientific methodology in general, emphasizes the verbal behavior of the scientist: How reliable are his measures, how significant are the differences he reports, how confident can we be that what he says is true?

BF Skinner, 1963

Welcome to AP Statistics! I look forward to getting to know each and all of you as we explore the exciting world of probabilities and statistics. In this class, we'll learn to gather and analyze data and use them to explain and predict various phenomena. We'll also draw from real-world examples to see how statistics are used to shape the perceptions (and sometimes the realities) of the world around us. There's even a measurable probability that we'll have fun along the way.

Course Description

AP Statistics will introduce you to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. You will be exposed to four broad conceptual themes: exploring data by observing patterns and deviations, planning a study by deciding what and how to measure, anticipating patterns by producing models using probability theory and simulation, and statistical inference by confirming models. At the end of the course, all students will be required to take the AP Statistics exam for possible college credit.

AP Statistics Examination

The AP Statistics examination will be administered nationwide on Thursday, May 4, 2023. Course activities and examinations will be designed to familiarize you with the format, depth of knowledge, and scope of the questions you will see on the AP examination.

Textbook

Starnes, Daren S. and Josh Tabor. *The Practice of Statistics, 6th edition*. New York: Bedford, Freeman and Worth, 2020.

Required Calculator

A good calculator with statistical functions is required. The TI-83 will work, but the TI-84 series allows for easier data entry and use. If a calculator other than a TI-83 or TI-84 is to be used, please check the AP website for compatibility with the AP test.

Homework

I will assign readings and/or problems from the textbook every week. Homework will not be scored for credit, but it will be a useful—and perhaps a crucial—tool towards mastering the concepts in the class.

Flashcards

To succeed in AP Statistics, you must master the extensive grammar associated with the concepts covered in the course. To help with this mastery, each of you should create, maintain, and study from a set of flashcards covering the vocabulary and concepts covered in the course.

Low-Threat Quizzes

Expect two low-threat quizzes every week, usually on Tuesdays and Fridays. These quizzes will focus on specific concepts and processes that were recently covered in class.

Quizzes

Quizzes will be given on most Wednesdays. These quizzes will primarily focus on material from recent classes (current chapter), but 20-30% of each quiz will include material from previous chapters.

Tests and the Final Exam

Three tests are scheduled for each semester. These tests will not only cover concepts from a specific block of lessons, but they will also cover material from all previous blocks. Tests will be given during a single class period. A comprehensive final examination will also be given at the end of each semester.

Estimated Grading Percentages

Homework: 0%

Low-Threat Quizzes: 15%

Quizzes: 25%

Tests: 40%

Final Exam: 20%

Topics Covered

Fall Semester

- Analyzing and displaying data
- Modeling distributions of data
- Describing relationships
- Designing studies and experiments
- Ethics
- Simulations
- Probability

Second Semester

- Random variables
- Binomial and geometric distributions
- Sampling distributions
- Confidence intervals
- Estimating proportions and means
- Testing claims
- Comparing proportions or means
- Goodness of fit tests
- Regression analytics

Office Hours

I am generally available during flex or after school for anyone who needs extra help (dropping by unannounced is okay, but I recommend pre-coordinating your visit to make sure I'll be there).

Final Comments

- **Keep up with the reading.** The textbook is a great resource - read it. I will designate the appropriate sections to read throughout the year.
- **Do the homework.** Homework problems will generally be assigned after the associated concepts have been covered in class. Attempt the homework assigned to each lesson.
- **Learn the concepts.** Don't just memorize equations! Learn the concepts first, and then see how the concepts are represented in the math.
- **Participate in class.** Be attentive and take notes. Ask questions and participate in class discussions.

I hope you enjoy taking this course as much as I enjoy teaching it. I'm looking forward to a fun year.