

AP[®] Statistics



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Course Information The purpose of the AP course in statistics is to introduce students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Students are exposed to four broad skill categories:

1. Selecting Statistical Methods: Selecting methods for collecting and/or analyzing data for statistical inference.
2. Data Analysis: Describing patterns, trends, associations, and relationships in data.
3. Using Probability and Simulation: Exploring random phenomena.
4. Statistical Argumentation: Developing an explanation or justifying a conclusion using evidence from data, definitions, or statistical inference.

Important components of the course will include the use of technology, projects and laboratories, cooperative group problem-solving, and writing, as a part of concept-oriented instruction and assessment. For more information, visit <https://apcentral.collegeboard.org/pdf/ap-statistics-course-and-exam-description.pdf>

Technology Students will learn and understand the statistical capabilities of a graphing calculator and of the provided software. Students will be issued their own *TI-84 Plus graphing calculator*, for which they will be held financially responsible if lost or damaged. They will use the calculator in class, at home, and on the AP exam. It is highly recommended that students pay close attention to the functions of the calculator so that they may fully learn its features how to interpret its output.

Students will become proficient not only in the computational capabilities of technology, but, more importantly, they will demonstrate how to fully interpret and understand the output from different forms of output from these devices.

Primary Textbook Yates, Moore, and Starnes. *The Practice of Statistics*, 6th edition.

The textbook is an excellent resource, and students will be expected to read through each chapter thoroughly as we progress through the semester. Normally, students are expected to have each chapter read with notes taken on important concepts, main ideas, definitions and terms before the day that we will formally talk about the chapter in class.

Secondary Resources

BVD	Bock, David; Velleman, Paul; De Veaux, Richard. <i>Stats: Modeling the World, Third Edition</i> . Boston: Pearson Addison Wesley, 2004.
POD	Peck, Roxy; Olsen, Chris; Devore, Jay. <i>Introduction to Statistics & Data Analysis, Fourth Edition</i> . Boston: Brooks/Cole, 2012.
BLU	Bluman, Allan G. <i>Elementary Statistics: A Step by Step Approach, 7th edition</i> . Boston: McGraw Hill, 2007
OL	Ott, R. Lyman; Longnecker, Michael. <i>An Introduction to Statistical Methods and Data Analysis, Fifth Edition</i> . Pacific Grove, CA. Duxbury, 2001
ABS	Scheaffer, Richard L. <i>Activities Based Statistics, 2nd edition</i> . Key Curriculum Press, 2008
FR	Free Response Practice Questions from Released AP Exams
SP	Supplemental Resources

Materials: Each student should bring the following items to class daily:

- Three-ring binder
- Paper, Graph Paper, Pencil
- Textbook – The Practice of Statistics 6th edition
- Graphing calculator (A TI-84 Plus will be issued to you, but is recommended that you purchase your own.)
- A device that can access Google Classroom and AP Classroom

Course Content and Chapter Correlation

Analyzing Data: Looking for Patterns and Departures from Patterns

Chapter 1 Exploring Data

- 1.1 Displaying Distributions with Graphs
- 1.2 Displaying Distributions with Numbers

Chapter 2 Describing Locations in a Distribution

- 2.1 Measures of Relative Standing and Density Curves
- 2.2 Normal Distributions

Chapter 3 Examining Relationships

- 3.1 Scatterplots and Correlation
- 3.2 Least-Squares Regression

Chapter 4 More about Relationships between Two Variables

- 4.1 Transforming to Achieve Linearity
- 4.2 Relationships between Categorical Variables
- 4.3 Establish Correlation

Producing Data: Surveys, Observational Studies, and Experiments

Chapter 5 Producing Data

- 5.1 Designing Samples
- 5.2 Designing Experiments

Probability and Random Variables: Foundations for Inference

Chapter 6 Probability and Simulation: The Study of Randomness

- 6.1 Simulation
- 6.2 Probability Models
- 6.3 General Probability Rules

Chapter 7 Random Variables

- 7.1 Discrete and Continuous Random Variables
- 7.2 Means and Variances of Random Variables

Chapter 8 The Binomial and Geometric Distributions

- 8.1 The Binomial Distribution
- 8.2 The Geometric Distribution

Chapter 9 Sampling Distributions

- 9.1 Sampling Distributions
- 9.2 Sample Proportions
- 9.2 Sample Means

Inference: Conclusions with Confidence

Chapter 10 Estimating with Confidence

- 10.1 Confidence Intervals: The Basics
- 10.2 Estimating a Population Mean
- 10.3 Estimating a Population Proportion

Chapter 11 Testing a Claim

- 11.1 Significance Tests: The Basics
- 11.2 Carrying Out Significance Tests
- 11.3 Use and Abuse of Tests
- 11.4 Using Inference to Make Decisions

Chapter 12 Significance Tests in Practice

- 12.1 Tests about a Population Mean
- 12.2 Tests about a Population Proportion

Chapter 13 Comparing Two Population Parameters

- 13.1 Comparing Two Means
- 13.2 Comparing Two Proportions

Chapter 14 Inference for Distributions of Categorical Variables: Chi-Square Procedures

- 14.1 Test for Goodness of Fit
- 14.2 Inference for Two-Way Tables

Chapter 15 Inference for Regression

Grading Procedures

Major Assessments 45%
Minor Assessments 20%
Daily Assignments 15%
Final Assessment 20%

This course includes a cumulative final exam at the end of each semester.

Students and Parents are responsible for monitoring progress and grades on Infinite Campus.

Homework will be checked randomly and graded for completion. Homework must be done completely and legibly, on loose-leaf paper.

In the event of an anticipated absence or NI, it is the student's responsibility to ask for notes or make-up work in advance so he/she does not fall behind.

Tests and Quizzes will resemble the AP Exam and will include multiple choice and free response questions. They will be graded in the same manner as the AP Exam and will be timed accordingly.

This course will have a full-length cumulative mock College Board exam.

Expectation of Accountability -Advanced Placement Statistics is a difficult course for several reasons and requires a great deal of studying outside of class. This course moves extremely fast. We will cover 900+ pages of material before spring break. It is essential that students complete all assignments on time and complete assigned readings to be successful. Students must study and practice regularly. I work hard to provide resources and opportunities for students to receive additional help and remediation to ensure content mastery. While I can strongly encourage students to take advantage of these opportunities, it is the student's responsibility to take full advantage of them.

Bathroom Policy - Students are expected to use the restroom in between classes. Passes will not be issued during instructional time. Students are expected to be in the classroom where learning takes place.

Chrome book -All students are issued a district-provided chrome book for instructional purposes, student engagement, and student learning. Chrome book use is at the direction and discretion of the classroom teacher.

AP EXAM! Students who are enrolled in the course are expected to take the AP Exam on May 7, 2024.

AP Exam timeline:

- ✓ 8.25.23– Deadline for students to electronically join all AP classes on College Board website (APcentral.collegeboard.org). *Help line for students and parents 1-888-225-5427
- ✓ 10.27.23 – Deadline for students to register for AP exams on the College Board website.

AP Fees

Houston County Board of Education will pay for all AP Exams this school year.

Exams ordered after ordering deadline:

- \$40 fee per exam **regardless of free and reduced lunch/STEM status.**

Cancel or fail to take AP exam after ordering deadline:

- \$40 fee per exam **regardless of free and reduced lunch/STEM status.**

Google Classroom

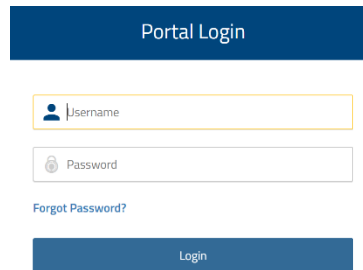
To encourage blended learning, online assignments will be posted weekly through Google Classroom. Students should be familiar with how to navigate the online platform, communicate with their teacher, and submit assignments on time. If there are technology limitations, please notify the teacher.

Accessing Google Classroom

Step One: Go to the county's website and click on SSO Portal.

Or, use this link: <https://portal.hcbe.net/auth/Login.aspx?ru=L3Nzby9wb3J0YWw=>

Step Two: Students should sign in *using their school/county username and password*. If you have questions on your username and password, please ask your teacher.

A screenshot of a web login form. At the top is a dark blue button labeled "Portal Login". Below it are two input fields: the first is labeled "Username" with a person icon, and the second is labeled "Password" with a lock icon. Below the password field is a link that says "Forgot Password?". At the bottom is a dark blue button labeled "Login".

Step Three: Students should click on the Google Classroom app.



Step Four: When students initially sign into Google Classroom, they should see several "classrooms." Simply click on "JOIN" for each class.

Let's get to work! 😊

Advanced Placement Statistics Syllabus

Murkerson 2023-2024

I understand that I, as an advanced placement student, am responsible for registering online for my exams. Failure to do so will mean that I am unable to participate in AP testing for this course during the current school year.

The school is responsible for meeting College Board deadlines regarding testing registration. Once I have chosen to test/not test and submitted my registration through the College Board website, I am responsible for any fees incurred should I later change my decision.

I have read the syllabus for Advanced Placement Statistics and I understand its contents:

Parent/Guardian (print name)

Parent/Guardian signature

Date

Parent/Guardian e-mail

Cell Phone #

Alternate Daytime Phone #

Student (print name)

Class Period

Student signature

Date

Student e-mail