= AP Statistics =

Advanced Placement Statistics (AP Statistics , AP Stat or AP Stats) is a college @-@ level high school statistics course offered in the United States through the College Board 's Advanced Placement program . This course is equivalent to a one semester , non @-@ calculus @-@ based introductory college statistics course and is normally offered to juniors and seniors in high school .

One of the College Board 's more recent additions , the AP Statistics exam was first administered in May 1996 to supplement the AP program 's math offerings , which had previously consisted of only AP Calculus AB and BC . In the United States , enrollment in AP Statistics classes has increased at a higher rate than in any other AP class .

Students may receive college credit or upper @-@ level college course placement upon the successful completion of a three @-@ hour exam ordinarily administered in May . The exam consists of a multiple choice section and a free response section that are both 90 minutes long . Each section is weighted equally in determining the students ' composite scores .

= = History = =

The Advanced Placement program has offered students the opportunity to pursue college @-@ level courses while in high school . Along with the Educational Testing Service , the College Board administered the first AP Statistics exam in May 1997 . The course was first taught to students in the 1996 @-@ 1997 academic year . Prior to that , the only mathematics courses offered in the AP program included AP Calculus AB and BC . Students who didn 't have a strong background in college @-@ level math , however , found the AP Calculus program inaccessible and sometimes declined to take a math course in their senior year . Since the number of students required to take statistics in college is almost as large as the number of students required to take calculus , the College Board decided to add an introductory statistics course to the AP program . Since the prerequisites for such a program doesn 't require mathematical concepts beyond those typically taught in a second @-@ year algebra course , the AP program 's math offerings became accessible to a much wider audience of high school students . The AP Statistics program addressed a practical need as well , since the number of students enrolling in majors that use statistics has grown . A total of 7 @,@ 667 students took the exam during the first administration , which is the highest number of students to take an AP exam in its first year . Since then , the number of students taking the exam rapidly grew to 98 @,@ 033 in 2007 , making it one of the 10 largest AP exams .

= = Course = =

If the course is provided by their school , students normally take AP Statistics in their junior or senior year and may decide to take it concurrently with a pre @-@ calculus course . This offering is intended to imitate a one @-@ semester , non @-@ calculus based college statistics course , but high schools can decide to offer the course over one semester , two trimesters , or a full academic year .

The six @-@ member AP Statistics Test Development Committee is responsible for developing the curriculum . Appointed by the College Board , the committee consists of three college statistics teachers and three high school statistics teachers who are typically asked to serve for terms of three years .

= = = Curriculum = = =

Emphasis is placed not on actual arithmetic computation , but rather on conceptual understanding and interpretation . The course curriculum is organized around four basic themes ; the first involves exploring data and covers 20 ? 30 % of the exam . Students are expected to use graphical and numerical techniques to analyze distributions of data , including univariate , bivariate , and categorical data . The second theme involves planning and conducting a study and covers 10 ? 15

% of the exam . Students must be aware of the various methods of data collection through sampling or experimentation and the sorts of conclusions that can be drawn from the results . The third theme involves probability and its role in anticipating patterns in distributions of data . This theme covers 20 ? 30 % of the exam . The fourth theme , which covers 30 ? 40 % of the exam , involves statistical inference using point estimation , confidence intervals , and significance tests .

= = Exam = =

Along with the course curriculum , the exam is developed by the AP Statistics Test Development Committee as well . With the help of other college professors , the committee creates a large pool of possible questions that is pre @-@ tested with college students taking statistics courses . The test is then refined to an appropriate level of difficulty and clarity . Afterwards , the Educational Testing Service is responsible for printing and administering the exam .

= = = Structure = = =

The exam is offered every year in May . Students are not expected to memorize any formulas ; rather , a list of common statistical formulas related to descriptive statistics , probability , and inferential statistics is provided . Moreover , tables for the normal , Student 's t and chi @-@ squared distributions are given as well . Students are also expected to use graphing calculators with statistical capabilities . The exam is three hours long with ninety minutes allotted to complete each of its two sections : multiple choice and free @-@ response . The multiple choice portion of the exam consists of forty questions with five possible answers each . The free response section contains six open @-@ ended questions that are often long and divided into multiple parts . The first five of these questions may require twelve minutes each to answer and normally relate to one topic or category . The sixth question consists of a broad @-@ ranging investigative task and may require approximately twenty @-@ five minutes to answer .

= = = Grading = = =

The multiple choice section is scored immediately after the exam by computer . One point is awarded for each correct answer , no points are credited or deducted for unanswered questions , and points are no longer deducted for having an incorrect answer .

Students ' answers to the free @-@ response section are reviewed in early June by readers that include high school and college statistics teachers gathered in a designated location . The readers use a pre @-@ made rubric to assess the answers and normally grade only one question in a given exam . Each question is graded on a scale from 0 to 4 , with a 4 representing the most complete response . Communication and clarity in the answers receive a lot of emphasis in the grading .

Both sections are weighted equally when the composite score is calculated . The composite score is reported on a scale from 1 to 5 , with a score of 5 being the highest possible .

= = = Textbooks = = =

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Peck , Roxy ; Chris Olsen ; Jay L. Devore (2008) . Introduction to Statistics and Data Analysis (3rd ed .) . Cengage Learning . ISBN 0 @-@ 495 @-@ 55783 @-@ 8 . Retrieved 2009 @-@ 08 @-@ 04 .

Watkins , Ann E. ; Richard L. Scheaffer ; George W. Cobb (2004) . Statistics in Action :

Understanding a World of Data . Key Curriculum Press . ISBN 1 @-@ 55953 @-@ 313 @-@ 7 .
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= = = Teaching guides = = =

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Gordon , Florence and Sheldon , ed . (1992) . " Statistics for the Twenty @-@ First Century " . MAA Notes (Washington , D.C. : Mathematical Association of America) 26 .
Moore , Thomas , ed . (2000) . " Teaching Statistics : Resources for Undergraduate Instructors " . MAA Notes (Washington , D.C. : Mathematical Association of America) 52 .
National Council of Teachers of Mathematics (2003) . Principles and Standards for School Mathematics (3 ed .) . Reston , VA : National Council of Teachers of Mathematics .