

Course Syllabus

Description:

Advanced Placement Statistics introduces you to exploring data, sampling and experimentation. You'll plan, conduct studies, anticipate patterns using probabilities and simulations, and use statistical inference to analyze data and draw conclusions.

Estimated Completion Time: 2 segment course/ 32 - 36

Major Topics and Concepts:

Segment I:

Module One: Exploring Data

- 01.00 Segment One Diagnostic Test
- 01.01 Classifying Variables
- 01.02 Describing Data
- 01.03 Displaying Data
- 01.04 Mid-Module Check
- 01.05 Measuring Position
- 01.06 Normal Distribution
- 01.07 Module Review and Discussion-Based Assessment
- 01.08 Module Test

Module Two: Exploring Relationships

- 02.00 Introduction
- 02.01 Scatterplots and Correlation
- 02.02 Least-Squares Regression Part One
- 02.03 Mid-Module Check
- 02.04 Least-Squares Regression Part Two
- 02.05 Transformations
- 02.06 Module Review and Discussion-Based Assessment
- 02.07 Module Test

Module Three: Collecting Data

- 03.00 Introduction
- 03.01 Sampling and Surveys
- 03.02 Experiments Part One
- 03.03 Mid-Module Check
- 03.04 Experiments Part Two
- 03.05 Correlation Versus Causation

- 03.06 Module Review and Discussion-Based Assessment
- 03.07 Module Test

Module Four: Probability and Random Variables

- 04.00 Introduction
- 04.01 Randomness and Simulations
- 04.02 Probability
- 04.03 Mid-Module Check
- 04.04 Random Variables
- 04.05 Binomial Random Variables
- 04.06 Geometric Random Variables
- 04.07 Segment One Review and Discussion-Based Assessment
- 04.08 Segment One Exam

Segment II:

Module Five: Sampling Distributions and Confidence Intervals

- 05.00 Segment Two Diagnostic Test
- 05.01 Sampling Distributions and Proportions
- 05.02 Sample Means
- 05.03 Mid-Module Check
- 05.04 Confidence Intervals for Proportions
- 05.05 Confidence Intervals for Means
- 05.06 Module Review and Discussion-Based Assessment
- 05.07 Module Test

Module Six: Proportions

- 06.00 Introduction
- 06.01 Hypothesis Testing—One Proportion
- 06.02 Errors, Power, and Significance
- 06.03 Mid-Module Check
- 06.04 Confidence Intervals—Two Proportions
- 06.05 Hypothesis Testing—Two Proportions
- 06.06 Module Review and Discussion-Based Assessment
- 06.07 Module Test

Module Seven: Means and Slope

- 07.00 Introduction
- 07.01 Hypothesis Testing—One-Sample Mean
- 07.02 Comparing Two Means
- 07.03 Mid-Module Check
- 07.04 Matched Pairs
- 07.05 Linear Regression and Interval for Slope
- 07.06 Module Review and Discussion-Based Assessment
- 07.07 Module Test

Module Eight: Chi-Square and Summary

- 08.00 Introduction
- 08.01 Chi-Square Goodness-of-Fit Test
- 08.02 Chi-Square Test for Inference

- 08.03 Mid-Module Check
- 08.04 Exploring Data, Sampling, and Experimentation Review
- 08.05 Anticipating Patterns and Statistical Inference Review
- 08.06 Segment Two Review and Discussion-Based Assessment
- 08.07 Segment Two Exam

Course Assessment and Participation Requirements:

To achieve success, students are expected to submit work in each course weekly. Students can learn at their own pace; however, “any pace” still means that students must make progress in the course every week. To measure learning, students complete self-checks, practice lessons, multiple choice questions, projects, discussion-based assessments, and discussions. Students are expected to maintain regular contact with teachers; the minimum requirement is monthly. When teachers, students, and parents work together, students are successful.

