

Probability and Statistics provides a curriculum focused on understanding key data analysis and probabilistic concepts, calculations, and relevance to real-world applications. Students are challenged to work toward mastery of computational skills, apply calculators and other technology in data analysis, deepen their understanding of key ideas and solution strategies, and extend their knowledge through a variety of problem-solving applications.

Course topics include types of data, common methods used to collect data, and representations of data, including histograms, bar graphs, box plots, and scatterplots. Students learn to work with data by analyzing and employing methods of extending results, involving samples and populations, distributions, summary statistics, experimental design, regression analysis, simulations, and confidence intervals.

Ideas involving probability — including sample space, empirical and theoretical probability, expected value, and independent and compound events — are covered as students explore the relationship between probability and data analysis.

Extended projects allow for more open-ended, extended applications of concepts and skills. Students collect and analyze statistical data about a topic that interests them, and they apply probability concepts in a real-world context.

The content is based on the Common Core standards and is aligned with state standards.

## UNIT 1: INTRODUCTION TO STATISTICS

### LESSON 1: WHAT IS STATISTICS?

#### Study: What Is Statistics?

Learn reasons for studying statistics, how statistics is used, and the differences between sample data and population parameters.

Duration: 0 hrs 40 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: What Is Statistics?

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 2: COLLECTING DATA

#### Study: Collecting Data

Learn about different sampling methods, biases in sampling, and how sampling methods and biases can affect conclusions drawn from studies.

Duration: 0 hrs 40 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Collecting Data

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 3: RANDOM SAMPLING

#### Study: Random Sampling

Learn about different sampling methods, biases in sampling, and how sampling methods and biases can affect conclusions drawn from studies.

Duration: 0 hrs 40 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Random Sampling**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 4: EXPERIMENTAL DESIGN**

### **Study: Experimental Design**

Learn about experimental design, including but not limited to treatments, randomization, techniques to address extraneous factors, and appropriate conclusions.

Duration: 0 hrs 40 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Experimental Design**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### **Discuss: Applying Experimental Design Concepts to Real-World Studies**

Join a three- to five-question discussion to practice methods learned in this unit.

Duration: 0 hrs 20 mins Scoring: 30 points

## **LESSON 5: INTRODUCTION TO STATISTICS WRAP-UP**

### **Practice: Assignment**

Submit your work for a set of 20 practice problems.

Duration: 0 hrs 40 mins Scoring: 100 points

### **Review: Introduction to Statistics**

Prepare for the unit test by reviewing key concepts and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

### **Test (CS): Introduction to Statistics**

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 50 points

### **Test (TS): Introduction to Statistics**

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

## **UNIT 2: DESCRIBING DATA GRAPHICALLY**

### **LESSON 1: CATEGORICAL DATA**

#### **Study: Categorical Data**

Learn how to construct and interpret bar charts, pie graphs, and comparative bar charts.

Duration: 0 hrs 40 mins Scoring: 0 points

#### **Checkpoint: Practice Problems**

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### **Quiz: Categorical Data**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 2: NUMERICAL DATA

### Study: Numerical Data

Learn how to construct and interpret stem-and-leaf plots, histograms, and dot plots along with comparative stem-and-leaf and dot plots.

Duration: 0 hrs 40 mins Scoring: 0 points

### Checkup: Practice Problems

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Numerical Data

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 3: TWO-WAY FREQUENCY TABLES

### Study: Two-Way Frequency Tables

Learn how to build and use two-way frequency tables and two-way relative frequency tables. Understand how to find and use joint frequencies and marginal frequencies, and how to calculate conditional relative probabilities from a two-way table. Use two-way tables to recognize associations in data.

Duration: 0 hrs 45 mins Scoring: 0 points

### Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Two-Way Frequency Tables

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

## LESSON 4: DESCRIBING DATA GRAPHICALLY WRAP-UP

### Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 0 hrs 40 mins Scoring: 100 points

### Review: Describing Data Graphically

Prepare for the unit test by reviewing key concepts and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

### Test (CS): Describing Data Graphically

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 50 points

### Test (TS): Describing Data Graphically

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

## UNIT 3: MEASURES OF CENTER AND SPREAD

### LESSON 1: MEASURES OF CENTER

#### Study: Measures of Center

Learn how to calculate and interpret measures of center, such as mean, median, and mode.

Duration: 0 hrs 40 mins Scoring: 0 points

#### Checkup: Practice Problems

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Measures of Center

Take a quiz to assess your understanding of the material.

## LESSON 2: MEASURES OF SPREAD

### Study: Measures of Spread

Learn how to calculate and interpret variance, standard deviation, range, interquartile range, and outliers.

Duration: 0 hrs 40 mins Scoring: 0 points

### Checkup: Practice Problems

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Measures of Spread

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 3: BOX PLOTS

### Study: Box Plots

Learn how to calculate and interpret box plots, comparative box plots, and modified box plots.

Duration: 0 hrs 40 mins Scoring: 0 points

### Checkup: Practice Problems

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Box Plots

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 4: PROJECT

### Project: Project

Use your knowledge, skills, and resources to make sense of and persevere in solving a real-world problem.

Duration: 2 hrs Scoring: 80 points

## LESSON 5: MEASURES OF CENTER AND SPREAD WRAP-UP

### Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 0 hrs 40 mins Scoring: 100 points

### Review: Measures of Center and Spread

Prepare for the unit test by reviewing key concepts and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

### Test (CS): Measures of Center and Spread

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 50 points

### Test (TS): Measures of Center and Spread

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

## UNIT 4: DESCRIBING DATA SETS

### LESSON 1: DESCRIBING DISTRIBUTIONS

#### Study: Describing Distributions

Learn how to describe distributions using measures of center, shape, and spread for single and comparative data sets.

Duration: 0 hrs 40 mins Scoring: 0 points

#### Checkup: Practice Problems

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Describing Distributions**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### **Discuss: Displaying and Describing Real-World Data**

Join a three- to five-question discussion to practice methods learned in this unit.

Duration: 0 hrs 20 mins Scoring: 30 points

## **LESSON 2: COMPARING DISTRIBUTIONS**

### **Study: Comparing Distributions**

Learn how to calculate the effects of transformations on the center, shape, and spread.

Duration: 0 hrs 40 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Describing Data Sets Wrap-Up**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 3: TRANSFORMING UNIVARIATE DATA**

### **Study: Transforming Univariate Data**

Learn how to calculate the effects of transformations on the center, shape, and spread.

Duration: 0 hrs 40 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Transforming Univariate Data**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 4: DESCRIBING DATA SETS WRAP-UP**

### **Practice: Assignment**

Submit your work for a set of 20 practice problems.

Duration: 0 hrs 40 mins Scoring: 100 points

### **Review: Describing Data Sets**

Prepare for the unit test by reviewing key concepts and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

### **Test (CS): Describing Data Sets**

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 50 points

### **Test (TS): Describing Data Sets**

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

## **UNIT 5: MODELING DATA**

### **LESSON 1: LINEAR MODELS IN DATA**

#### **Study: Linear Models in Data**

Create scatterplots for bivariate data and recognize positive and negative correlations. Use a calculator to find correlation coefficients, and understand what the result says about the strength of the correlation. Know that correlation

does not imply causation.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Linear Models in Data**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

## **LESSON 2: CORRELATION**

### **Study: Correlation**

Learn how to calculate and interpret Pearson's sample correlation coefficient.

Duration: 0 hrs 40 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Correlation**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 3: REGRESSION METHODS**

### **Study: Regression Methods**

Learn how to calculate a linear regression equation, interpret the slope and intercept in context, and identify influential points (compared to large residuals).

Duration: 0 hrs 40 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Regression Methods**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 4: ASSESSING DATA MODELS**

### **Study: Assessing Data Models**

Learn how to interpret correlation coefficients ( $r$ -values), coefficients of determination ( $r^2$ -values), and residual plots.

Duration: 0 hrs 40 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Assessing Data Models**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 5: NONLINEAR MODELS**

### **Study: Nonlinear Models**

Learn how to apply nonlinear regression.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Nonlinear Models

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

## LESSON 6: TRANSFORMING BIVARIATE DATA

### Study: Transforming Bivariate Data

Learn how to transform data so that a linear regression equation can be used to model nonlinear relationships.

Duration: 0 hrs 40 mins Scoring: 0 points

### Checkpoint: Practice Problems

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Transforming Bivariate Data

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### Discuss: Transforming Real-World Bivariate Data

Join a three- to five-question discussion to practice methods learned in this unit.

Duration: 0 hrs 20 mins Scoring: 30 points

## LESSON 7: MODELING DATA WRAP-UP

### Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 0 hrs 40 mins Scoring: 100 points

### Review: Modeling Data

Prepare for the unit test by reviewing key concepts and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

### Test (CS): Modeling Data

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 50 points

### Test (TS): Modeling Data

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

## UNIT 6: SEMESTER 1 REVIEW AND EXAM

### LESSON 1: SEMESTER 1 REVIEW AND EXAM

#### Review: Wrap-Up and Review

Prepare for the course exam by reviewing key concepts covered in this course.

Duration: 1 hr Scoring: 0 points

#### Exam: Semester 1 Exam

Take a computer-scored exam to demonstrate your mastery of concepts and skills covered in this course.

Duration: 0 hrs 50 mins Scoring: 200 points

## UNIT 7: INTRODUCTION TO PROBABILITY

### LESSON 1: RANDOM OUTCOMES, SAMPLE SPACES, AND EVENTS

#### Study: Random Outcomes, Sample Spaces, and Events

Explore sample spaces, events, and outcomes. Find probabilities of events and complements of events.

Duration: 0 hrs 35 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Random Outcomes, Sample Spaces, and Events

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 2: PERMUTATIONS AND COMBINATIONS

### Study: Permutations and Combinations

Learn definitions of permutations and combinations. Decide whether a situation involves permutations or combinations. Find the number of permutations or combinations for a given situation. Find probabilities using permutations and combinations.

Duration: 0 hrs 35 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Permutations and Combinations

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 3: INDEPENDENT AND DEPENDENT EVENTS

### Study: Independent and Dependent Events

Use the general addition rule to find probabilities of compound events. Learn the definitions of independent and dependent events, and classify events as independent or dependent. Find  $P(A \text{ and } B)$  for independent events.

Duration: 0 hrs 35 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Independent and Dependent Events

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 4: CONDITIONAL PROBABILITY

### Study: Conditional Probability

Learn how to identify and solve conditional probability problems. Use conditional probability concepts to test events for independence.

Duration: 0 hrs 35 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Conditional Probability

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 5: INTRODUCTION TO PROBABILITY WRAP-UP

### Checkpoint: Assignment

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 mins Scoring: 0 points

### Review: Introduction to Probability

Prepare for the unit test by reviewing key concepts and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

### Test (CS): Introduction to Probability

Take a computer-scored test to check what you have learned in this unit.



Duration: 0 hrs 40 mins Scoring: 50 points

### **Test (TS): Introduction to Probability**

Take a teacher-scored test to check what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

## **UNIT 8: APPLICATIONS OF PROBABILITY**

### **LESSON 1: USING TWO-WAY FREQUENCY TABLES**

#### **Study: Using Two-Way Frequency Tables**

Identify joint and marginal frequencies. Use two-way tables to find probabilities and conditional probabilities. Use two-way tables to test for independence and to help make decisions.

Duration: 0 hrs 35 mins Scoring: 0 points

#### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### **Quiz: Using Two-Way Frequency Tables**

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

### **LESSON 2: EXPECTED VALUE AND FAIR DECISIONS**

#### **Study: Expected Value and Fair Decisions**

Learn how to simulate a random event using random number generators and rows of random digits and use results to estimate probabilities empirically.

Duration: 0 hrs 40 mins Scoring: 0 points

#### **Checkpoint: Practice Problems**

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### **Quiz: Expected Value and Fair Decisions**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### **LESSON 3: SIMULATIONS**

#### **Study: Simulations**

Learn how to simulate a random event using random number generators and rows of random digits and use results to estimate probabilities empirically.

Duration: 0 hrs 40 mins Scoring: 0 points

#### **Checkpoint: Practice Problems**

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### **Quiz: Simulations**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

#### **Discuss: Using Simulations to Explore Real-World Concerns**

Join a three- to five-question discussion to practice methods learned in this unit.

Duration: 0 hrs 20 mins Scoring: 30 points

### **LESSON 4: PROJECT**

#### **Project: Project**

Use your knowledge, skills, and resources to make sense of and persevere in solving a real-world problem.

Duration: 2 hrs Scoring: 80 points

## LESSON 5: APPLICATIONS OF PROBABILITY WRAP-UP

### Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 0 hrs 40 mins Scoring: 100 points

### Review: Applications of Probability

Prepare for the unit test by reviewing key concepts and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

### Test (CS): Applications of Probability

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 50 points

### Test (TS): Applications of Probability

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

## UNIT 9: DISCRETE PROBABILITY DISTRIBUTIONS

### LESSON 1: DISCRETE RANDOM VARIABLES

#### Study: Discrete Random Variables

Learn how to identify a discrete random variable and calculate its probability distribution, mean, and standard deviation.

Duration: 0 hrs 40 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Discrete Random Variables

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 2: BINOMIAL PROBABILITY DISTRIBUTIONS

#### Study: Binomial Probability Distributions

Learn how to calculate binomial probability distributions, including mean and standard deviation.

Duration: 0 hrs 40 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Binomial Probability Distributions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 3: CUMULATIVE BINOMIAL PROBABILITY DISTRIBUTIONS

#### Study: Cumulative Binomial Probability Distributions

Learn how to calculate binomial probability distributions, including mean and standard deviation.

Duration: 0 hrs 40 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Cumulative Binomial Probability Distributions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 4: DISCRETE PROBABILITY DISTRIBUTIONS WRAP-UP

**Practice: Assignment**

Submit your work for a set of 20 practice problems.

Duration: 0 hrs 40 mins Scoring: 100 points

**Review: Discrete Probability Distributions**

Prepare for the unit test by reviewing key concepts and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

**Test (CS): Discrete Probability Distributions**

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 50 points

**Test (TS): Discrete Probability Distributions**

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

## UNIT 10: CONTINUOUS PROBABILITY DISTRIBUTIONS

### LESSON 1: CONTINUOUS RANDOM VARIABLES

**Study: Continuous Random Variables**

Learn how to identify a continuous random variable and calculate its probability distribution.

Duration: 0 hrs 40 mins Scoring: 0 points

**Checkpoint: Practice Problems**

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

**Quiz: Continuous Random Variables**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 2: NORMAL DISTRIBUTIONS

**Study: Normal Distributions**

Learn how to identify properties of a normal distribution and then apply these properties to determine probabilities with a table or graphing calculator.

Duration: 0 hrs 40 mins Scoring: 0 points

**Checkpoint: Practice Problems**

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

**Quiz: Normal Distributions**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

**Discuss: Checking for Normal Probability Distributions**

Join a three- to five-question discussion to practice methods learned in this unit.

Duration: 0 hrs 20 mins Scoring: 30 points

### LESSON 3: Z-SCORES

**Study: z-Scores**

Learn how to identify properties of a normal distribution and then apply these properties to determine probabilities with a table or graphing calculator.

Duration: 0 hrs 40 mins Scoring: 0 points

**Checkpoint: Practice Problems**

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: z-Scores

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 4: CONTINUOUS PROBABILITY DISTRIBUTIONS WRAP-UP

### Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 0 hrs 40 mins Scoring: 100 points

### Review: Continuous Probability Distributions

Prepare for the unit test by reviewing key concepts and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

### Test (CS): Continuous Probability Distributions

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 50 points

### Test (TS): Continuous Probability Distributions

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

## UNIT 11: SAMPLE DISTRIBUTIONS AND CONFIDENCE INTERVALS

### LESSON 1: SINGLE SAMPLE MEANS

#### Study: Single Sample Means

Learn how to understand and apply the concepts and parameters of the central limit theorem to single sample mean distributions.

Duration: 0 hrs 40 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Single Sample Means

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 2: SINGLE SAMPLE PROPORTIONS

#### Study: Single Sample Proportions

Learn how to understand and apply the concepts and parameters of the central limit theorem to single sample proportion distributions.

Duration: 0 hrs 40 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Single Sample Proportions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 3: CONFIDENCE INTERVALS: SAMPLE MEANS

#### Study: Confidence Intervals: Sample Means

Learn how to use large sample data to calculate and interpret a confidence interval for a population mean.

Duration: 0 hrs 40 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Confidence Intervals: Sample Means**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 4: CONFIDENCE INTERVALS: SAMPLE PROPORTIONS**

### **Study: Confidence Intervals: Sample Proportions**

Learn how to use large sample data to calculate and interpret a confidence interval for a population proportion.

Duration: 0 hrs 40 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Confidence Intervals: Sample Proportions**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 5: EVALUATING STATISTICAL STUDIES**

### **Study: Evaluating Statistical Studies**

Learn how to evaluate the design of a study, the appropriateness of its analysis, and the validity of its conclusions.

Duration: 0 hrs 40 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Evaluating Statistical Studies**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### **Discuss: Analyzing Real-World Reports**

Join a three- to five-question discussion to practice methods learned in this unit.

Duration: 0 hrs 20 mins Scoring: 30 points

## **LESSON 6: SAMPLE DISTRIBUTIONS AND CONFIDENCE INTERVALS WRAP-UP**

### **Practice: Assignment**

Submit your work for a set of 20 practice problems.

Duration: 0 hrs 40 mins Scoring: 100 points

### **Review: Sample Distributions and Confidence Intervals**

Prepare for the unit test by reviewing key concepts and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

### **Test (CS): Sample Distributions and Confidence Intervals**

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 50 points

### **Test (TS): Sample Distributions and Confidence Intervals**

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

## **UNIT 12: SEMESTER 2 REVIEW AND EXAM**

### **LESSON 1: SEMESTER 2 REVIEW AND EXAM**

#### **Review: Wrap-Up and Review**

Prepare for the course exam by reviewing key concepts covered in this course.

Duration: 1 hr Scoring: 0 points

#### **Exam: Semester 2 Exam**

Take a computer-scored exam to demonstrate your mastery of concepts and skills covered in this course.

Duration: 0 hrs 50 mins Scoring: 200 points