Advanced Mathematical Decision Making is a state-designed mathematics course that furthers student interaction with concept knowledge gained from algebra and geometry. It builds on students' comprehension of statistical information and summaries, basic financial decisions, and analyzing and effectively modeling data and information to develop capacity for making real-world, informed decisions.

Topics for this course include trigonometry and three-dimensional geometry; principles of personal finance, budgeting, and investments; graphical data description, measurement, and modeling; probability application and distribution.

Students begin each lesson by discovering new concepts through guided instruction, and then confirm their understanding in an interactive, feedback-rich environment. In Discussions, students exchange and explain their mathematical ideas. Modeling activities equip students with tools for analyzing a variety of real-world scenarios and mathematical ideas. Journaling activities allow students to reason abstractly and quantitatively, construct arguments, critique reasoning, and communicate precisely. Performance tasks prepare students to synthesize their knowledge in novel, real-world scenarios and require that they make sense of multifaceted problems and persevere in solving them.

This course is built to adhere to the Georgia state Standards of Excellence (GSE).

Length: Two Semesters

UNIT 1: TRIGONOMETRY

LESSON 1: TRIGONOMETRIC RATIOS

Study: Trigonometric Ratios
Learn the definitions of *sine*, *cosine*, and *tangent*. Memorize the shortcut "soh-cah-toa" as a way to relate these ratios. Explore the use of trigonometric ratios in the solution of a real-world problem involving the construction of a cable car.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Trigonometric Ratios
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Practice: Modeling: Leaning Towers
Use your knowledge of right triangles, trigonometric ratios, and the Pythagorean Theorem to model and solve a real-world problem.
Duration: 0 hrs 40 mins Scoring: 20 points

LESSON 2: LAW OF COSINES AND PROOFS

Study: Law of Cosines and Proofs
Use the law of cosines to solve triangles.
Duration: 0 hrs 35 mins

Checkup: Practice Problems
Complete a set of practice problems using the law of cosines.
Duration: 0 hrs 25 mins

Quiz: Law of Cosines and Proofs
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: LAW OF SINES AND PROOFS

Study: Law of Sines and Proofs
Use the law of sines to solve triangles and to explore the ambiguous case.

Duration: 0 hrs 35 mins

Checkup: Practice Problems
Complete a set of practice problems using the law of sines.

Duration: 0 hrs 25 mins

Journal: Law of Sines and Proofs
Use what you know about triangles and trigonometric ratios to prove the law of sines.

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 4: TRANSFORMATIONS AND MATRICES

Study: Transformations and Matrices
Represent vectors and parallelograms as matrices. Use scalar multiplication to scale vectors. Use matrix multiplication to rotate and reflect vectors and parallelograms.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Transformations and Matrices
Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 5: VECTORS

Study: Getting Around
Use vectors to describe motion.

Duration: 1 hr

Checkup: Lessons Learned
Complete a set of practice problems on vectors.

Duration: 0 hrs 50 mins

Quiz: Vectors
Take a quiz to assess your understanding of the material.

Duration: 0 hrs 40 mins Scoring: 20 points

LESSON 6: TRIGONOMETRY WRAP-UP

Checkup: Trigonometry Practice Problems
Check your understanding of the topics in this unit.

Duration: 0 hrs 25 mins Scoring: 0 points

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

Duration: 0 hrs 30 mins

Test (CS): Trigonometry
Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 74 points

UNIT 2: THREE-DIMENSIONAL SOLIDS

LESSON 1: THREE DIMENSIONS

Study: Three Dimensions
Learn about measuring three-dimensional figures.

Duration: 0 hrs 35 mins Scoring: 0 points

Quiz: Three Dimensions

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: WHAT IS A POLYHEDRON?

Study: What Is a Polyhedron?

Learn about the definition and elements of a polyhedron, prisms and their components, triangular and rectangular prisms, cubes, and regular and irregular pyramids.

Duration: 0 hrs 35 mins Scoring: 0 points

Quiz: What Is a Polyhedron?

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: CYLINDERS AND CONES

Study: Cylinders and Cones

Learn about the definition, components, and properties of a cylinder; the definition and components of a cone; and the similarities between cones and pyramids.

Duration: 0 hrs 35 mins Scoring: 0 points

Quiz: Cylinders and Cones

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: PLATONIC SOLIDS

Study: Platonic Solids

Learn about polygonal numbers, regularity of Platonic solids, and building your own Platonic solids.

Duration: 0 hrs 35 mins Scoring: 0 points

Quiz: Platonic Solids

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

Duration: 0 hrs 20 mins Scoring: 20 points

Practice: Modeling: Solids

Practice with a real-world solid modeling application.

Duration: 0 hrs 40 mins Scoring: 20 points

LESSON 5: SURFACE AREA

Study: Surface Area

Learn about perimeter and surface area; base and lateral area; slant height versus altitude; and the formulas for surface area of a right prism, an oblique prism, a regular pyramid, an oblique cylinder, a right cone, and an oblique cone. Explore sample problems dealing with these subjects.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Surface Area of Regular Prisms and Pyramids

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Surface Area of Right Cylinders and Cones

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 6: VOLUME

Study: Volume

Learn about area and volume, the formulas for volume of a cube and a rectangular prism, and Bonaventura Francesco Cavalieri's principle. Learn about the formulas for volume of a cylinder, a pyramid, and a cone; explore sample problems dealing with these formulas. Learn about cross-sectional area.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Volume of Prisms, Cylinders, and Cubes

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Volume of Cones, Cylinders, and Pyramids

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

Duration: 0 hrs 20 mins Scoring: 20 points

Journal: Volume

Think about and discuss how changing one dimension of a given shape changes its volume and surface area.

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 7: SPHERES

Study: Spheres

Learn about the definition of a sphere; the formulas for surface area and volume of a sphere; comparing the surface area and volume of a sphere, cube, cylinder, and cone; and using Cavalieri's principle to derive the formula for volume of a sphere.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Spheres

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 8: SIMILAR SOLIDS

Study: Similar Solids

Learn about similar prisms, pyramids, cylinders, cones, and spheres; the constant ratio between corresponding parts of similar solids; and the ratio of volumes of similar solids.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Similar Solids

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 9: PERFORMANCE TASK: THREE-DIMENSIONAL SOLIDS

Study: Geodesic Domes

Use your knowledge of three-dimensional solids to solve a geodesic dome problem.

Duration: 0 hrs 35 mins Scoring: 0 points

Project: Performance Task: The Subway Stop

Use what you know about three-dimensional solids to solve a real-world problem.

Duration: 2 hrs Scoring: 120 points

LESSON 10: THREE-DIMENSIONAL SOLIDS WRAP-UP

Checkup: Three-Dimensional Solids Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 mins Scoring: 0 points

Review: Three-Dimensional Solids

Get ready for the unit test by reviewing important ideas and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Three-Dimensional Solids

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

Duration: 0 hrs 40 mins Scoring: 50 points

UNIT 3: COST OF LIVING AND BUDGET

LESSON 1: TYPES OF WAGES

Study: Types of Wages

Understand the difference between hourly rate and salary. Use the hourly rate to calculate gross pay from a time card. Learn how to take overtime and tips into account.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Types of Wages

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: COMPENSATION PACKAGES

Study: Compensation Packages

Learn the various types of benefits that may be part of a compensation package. Explore situations in which a higher-paying job is not necessarily the best overall compensation.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Compensation Packages

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: PIECE RATE

Study: Piece Rate

Understand the concept of piece rate. Learn how to estimate hourly pay from piece rate. Model hourly and piece rates as linear equations through the origin.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Piece Rate

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: LINEAR EQUATIONS AND WAGES

Study: Linear Equations and Wages

Learn how to model salary that includes a start fee. Understand the concept of a *y*-intercept. Use piecewise functions to model bonus pay.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Linear Equations and Wages

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 5: PERCENTAGES AND COMMISSION

Study: Percentages and Commission

Understand how to use percentages to calculate commission pay with the formula *C = prn*.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Percentages and Commission

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 6: TAKE-HOME PAY: REQUIRED DEDUCTIONS

Study: Take-Home Pay: Required Deductions

Understand how taxes, Social Security, and Medicare are required deductions. Practice calculating the effect of such deductions.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Take-Home Pay: Required Deductions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 7: TAKE-HOME PAY: OPTIONAL DEDUCTIONS

Study: Take-Home Pay: Optional Deductions

Explore the concept of an optional deduction, such as health insurance, life insurance, disability, and retirement. Practice calculating net or take-home pay.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Take-Home Pay: Optional Deductions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 8: INCOME AND CAREER

Study: Income and Career

Understand various sources of income and the relationship between income and career preparation. Describe the correlation between income and a worker's skills and education.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins   Scoring: 0 points

Quiz: Income and Career

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins   Scoring: 20 points

LESSON 9: COST OF LIVING AND BUDGET

Study: Budget Sheets

Explore various types of monthly expenditures. Practice preparing and using a budget.

Duration: 0 hrs 45 mins   Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins   Scoring: 0 points

Quiz: Cost of Living and Budget

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins   Scoring: 20 points

LESSON 10: INCOME AND BUDGETING WRAP-UP

Review: Income and Budgeting

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

Duration: 0 hrs 30 mins   Scoring: 0 points

Practice: Income and Budgeting

Submit your work for a set of practice problems.

Duration: 0 hrs 40 mins   Scoring: 20 points

Discuss: Group Discussion

Discuss ideas from this unit that are still unclear. Inform others of strategies you developed during this unit.

Duration: 0 hrs 30 mins   Scoring: 30 points

Test (CS): Income and Budgeting

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

Duration: 0 hrs 50 mins   Scoring: 50 points

UNIT 4: PURCHASING AND CREDIT

LESSON 1: SALES TAX

Study: Sales Tax

Learn how to calculate sales tax based on percentages. Consider various state sales taxes and practice calculating totals while taking exempt items into account.

Duration: 0 hrs 45 mins   Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins   Scoring: 0 points

Quiz: Sales Tax

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins   Scoring: 20 points

LESSON 2: COUPONS, REBATES, AND SALES

Study: Coupons, Rebates, and Sales

Understand the effect of a coupon, rebate, or sale. Calculate the purchase total using the formula *item price - deduction + tax.*

Duration: 0 hrs 45 mins   Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Coupons, Rebates, and Sales

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: MARKETING

Study: Marketing

Understand the impact of marketing, advertising, and sales strategies/techniques on purchasing decisions.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Marketing

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: CREDIT CARDS

Study: Credit Cards

Understand how credit cards work and learn the language of credit. Compute the APR and effective rate of a given credit card.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Credit Cards

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 5: CALCULATING CREDIT CARD INTEREST

Study: Calculating Credit Card Interest

Learn how credit card companies compute interest. Explore the average daily balance, previous balance, and adjusted balance methods.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Calculating Credit Card Interest

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 6: TRACKING PAYMENTS AND PURCHASES

Study: Tracking Payments and Purchases

Make a table that shows the effects of making payments and additional purchases on the balance.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Tracking Payments and Purchases

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins   Scoring: 20 points

LESSON 7: COMPARING CREDIT CARDS

Study: Comparing Credit Cards

Compare the advantages and disadvantages of using cash versus a credit card. Compare cards by considering terms of use such as annual fees and a lower APR, no fees and a higher APR, or an introductory APR.

Duration: 0 hrs 45 mins   Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins   Scoring: 0 points

Quiz: Comparing Credit Cards

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins   Scoring: 20 points

LESSON 8: CREDIT SCORES

Study: Credit Scores

Learn the factors that are used to compute a credit score. Understand the scoring system. Understand how to improve your credit score. Use a hypothetical credit score table to determine a credit score.

Duration: 0 hrs 45 mins   Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins   Scoring: 0 points

Quiz: Credit Scores

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins   Scoring: 20 points

LESSON 9: BANKRUPTCY

Study: Bankruptcy

Define personal and business bankruptcy. Understand how bankruptcy works. See how bankruptcy affects your credit score.

Duration: 0 hrs 45 mins   Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins   Scoring: 0 points

Quiz: Bankruptcy

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins   Scoring: 20 points

LESSON 10: PURCHASING AND CREDIT WRAP-UP

Review: Purchasing and Credit

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

Duration: 0 hrs 30 mins   Scoring: 0 points

Practice: Purchasing and Credit

Submit your work for a set of practice problems.

Duration: 0 hrs 40 mins   Scoring: 20 points

Discuss: Group Discussion

Discuss ideas from this unit that are still unclear. Inform others of strategies you developed during this unit.

Duration: 0 hrs 30 mins   Scoring: 30 points

Test (CS): Purchasing and Credit

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

Duration: 0 hrs 50 mins Scoring: 50 points

UNIT 5: LOANS AND PAYMENTS

LESSON 1: SINGLE AND PAYDAY LOANS

Study: Single and Payday Loans

Define single and payday loans. Calculate the interest payments on single and payday loans. Compare APR to EAR (effective annual rate).

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Single and Payday Loans

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: INSTALLMENT LOANS AND LAYAWAY

Study: Installment Loans and Layaway

Understand how installment loans work. Learn the process of buying something on layaway. Calculate the number of weeks needed to pay off debts or purchases.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Installment Loans and Layaway

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: MONTHLY PAYMENT

Study: Monthly Payment

Derive and use the monthly payment formula. Learn the term *amortization*. Calculate the rate per period when the compounding period matches the number of payment periods.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Monthly Payment

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: LOAN PRE-APPROVALS

Study: Loan Pre-Approvals

Use the monthly payment formula to solve for the maximum loan amount. Calculate the rate per period.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Loan Pre-Approvals

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 5: DEFERRED PAYMENTS

Study: Deferred Payments

Explore situations in which there is a deferral of principal and interest payments. Compare the advantages and disadvantages of deferred payments. Consider school loans as a particular example of deferred payments.

Duration: 0 hrs 45 mins   Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins   Scoring: 0 points

Quiz: Deferred Payments

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins   Scoring: 20 points

LESSON 6: PAYING OFF

Study: Paying Off

Use the time-to-pay-off formula. Understand how the log function can be used to solve for variables in exponential expressions.

Duration: 0 hrs 45 mins   Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins   Scoring: 0 points

Quiz: Paying Off

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins   Scoring: 20 points

LESSON 7: PREPAYMENT

Study: Prepayment

Derive the prepayment formula. Understand how prepayment affects the loan. Calculate the amount needed to pay off a loan in a certain time period.

Duration: 0 hrs 45 mins   Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins   Scoring: 0 points

Quiz: Prepayment

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins   Scoring: 20 points

LESSON 8: LOANS AND PAYMENTS WRAP-UP

Review: Loans and Payments

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

Duration: 0 hrs 30 mins   Scoring: 0 points

Practice: Loans and Payments

Submit your work for a set of practice problems.

Duration: 0 hrs 40 mins   Scoring: 20 points

Discuss: Group Discussion

Discuss ideas from this unit that are still unclear. Inform others of strategies you developed during this unit.

Duration: 0 hrs 30 mins   Scoring: 30 points

Test (CS): Loans and Payments

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

Duration: 0 hrs 50 mins   Scoring: 50 points

UNIT 6: INVESTMENTS

LESSON 1: CDS

Study: CDs
Understand the function of a CD. Compare CDs to savings accounts. Perform calculations concerning tax deferral and early termination fees.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: CDs
Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: ANNUITIES

Study: Annuities
Define an annuity. Perform calculations using the time value of money equation. Perform calculations concerning tax and early termination fees.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Annuities
Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: BONDS

Study: Bonds
Understand the definition of a bond. Calculate the coupon of a bond.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Bonds
Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: STOCKS

Study: Stocks
Understand the difference between a stock and a bond. Learn how to read a stock page. Learn the process of buying and selling stock. Understand the taxation of stocks.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Stocks
Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 5: THE STOCK MARKET

Study: The Stock Market

Study the rate of change of a stock. Learn how stock indices are created. Explore the Dow Jones, the Standard and Poor's 500, and the Nasdaq. Learn the definition of a mutual fund.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: The Stock Market

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 6: PREDICTION

Study: Prediction

Use linear and exponential regression to model stock prices. Understand that stocks behave randomly.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Prediction

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 7: PERIODIC INVESTMENT

Study: Periodic Investment

Understand how dollar cost averaging works as an investment strategy.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Periodic Investment

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 8: RETIREMENT AND PERIODIC INVESTMENT

Study: Retirement

Compare IRAs and 401(k)s. Understand the difference between traditional and Roth IRAs.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Retirement

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 9: INDIVIDUAL NET WORTH

Study: Individual Net Worth

Learn how to calculate individual net worth. Define a liability and compute total liabilities.

Duration: 0 hrs 45 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

Quiz: Individual Net Worth

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 10: INVESTMENTS WRAP-UP

Review: Investments

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

Duration: 0 hrs 30 mins Scoring: 0 points

Practice: Investments

Submit your work for a set of practice problems.

Duration: 0 hrs 40 mins Scoring: 20 points

Discuss: Group Discussion

Discuss ideas from this unit that are still unclear. Inform others of strategies you developed during this unit.

Duration: 0 hrs 30 mins Scoring: 30 points

Test (CS): Investments

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

Duration: 0 hrs 50 mins Scoring: 50 points

UNIT 7: SEMESTER 1 EXAM

LESSON 1: SEMESTER 1 EXAM

Review: Semester 1 Exam

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

Duration: 0 hrs 30 mins Scoring: 0 points

Exam: Semester 1 Exam

Take a computer-scored exam to demonstrate your mastery of concepts and skills covered in Semester 1.

Duration: 0 hrs 50 mins Scoring: 220 points

UNIT 8: 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 50 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Categorical Data

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 30 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 50 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Numerical Data

Take a quiz to assess your understanding of the material.

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 50 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Two-Way Frequency Tables

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 30 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: 20 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 45 mins Scoring: 50 points

UNIT 9: 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 50 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Measures of Center

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 30 mins Scoring: 20 points

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 50 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Measures of Spread

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 30 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 50 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Box Plots

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 30 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: 50 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: 20 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 45 mins Scoring: 50 points

UNIT 10: 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 50 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Linear Models in Data

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 2: CORRELATION

Study: Correlation

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

Duration: 0 hrs 50 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Correlation

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 30 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 50 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Regression Methods

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 30 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 50 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Assessing Data Models

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 5: NONLINEAR MODELS

Study: Nonlinear Models

Learn how to apply nonlinear regression.

Duration: 0 hrs 50 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Nonlinear Models

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 30 mins Scoring: 20 points

Discuss: Nonlinear Models

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

Duration: 0 hrs 20 mins Scoring: 30 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 50 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Transforming Bivariate Data

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 30 mins Scoring: 20 points

Discuss: Transforming Real-World Bivariate Data

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

LESSON 7: MODELING DATA WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 0 hrs 40 mins Scoring: 20 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 45 mins Scoring: 50 points

UNIT 11: 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 50 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Random Outcomes, Sample Spaces, and Events

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 30 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 50 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Permutations and Combinations

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 30 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 $P(A$ and $B)$ for independent events.

Duration: 0 hrs 50 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Independent and Dependent Events

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 30 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 50 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Conditional Probability

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 5: INTRODUCTION TO PROBABILITY WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 0 hrs 40 mins Scoring: 20 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 45 mins Scoring: 50 points

UNIT 12: 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 50 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Using Two-Way Frequency Tables

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 2: USING PROBABILITY TO MAKE DECISIONS

Study: Using Probability to Make 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 50 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Using Probability to Make Decisions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 30 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 50 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Simulations

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 30 mins Scoring: 20 points

Discuss: Using Simulations to Explore Real-World Concerns

Participate in 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: 50 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: 20 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 45 mins Scoring: 50 points

UNIT 13: 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 50 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Discrete Random Variables

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 2: BINOMIAL PROBABILITY

Study: Binomial Probability

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

Duration: 0 hrs 50 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Binomial Probability

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 30 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 50 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Cumulative Binomial Probability Distributions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 30 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: 20 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 45 mins Scoring: 50 points

UNIT 14: SEMESTER 2 EXAM

LESSON 1: SEMESTER 2 EXAM

Review: Semester 2 Exam

Duration: 0 hrs 30 mins Scoring: 0 points

Exam: Semester 2 Exam

Take a computer-scored exam to demonstrate your mastery of concepts and skills covered in Semester 1.

Duration: 0 hrs 50 mins Scoring: 240 points