This course supports the assessment for Data-Driven Decision Making. The course covers 6 competencies and represents 3 competency units.

Introduction

Overview
This course presents critical problem-solving methodologies, including field research and data collection methods that enhance organizational performance. Topics include quantitative analysis, statistical tools, and quality tools. You will improve your ability to use data to make informed decisions.

Getting Started
Welcome to Data-Driven Decision Making! In this course, you will study six topics. MindEdge will be the primary learning resource along with select supplemental readings. Within each topic, you will be asked to read text, review case studies, and complete the self-check. Competency will be demonstrated by the successful completion of an objective assessment and a performance assessment.

Watch the following video for an introduction to this course:

Note: To download this video, right-click the following link and choose "Save as...": download video.

Competencies
This course provides guidance to help you demonstrate the following 6 competencies:

- **Competency 3009.1.1: The Case for Quantitative Analysis**
  The graduate uses decision-making methods to develop strategies for organizational decision processes.
- **Competency 3009.1.2: Statistics as a Managerial Tool**
  The graduate uses a variety of decision-analysis tools to evaluate alternatives during the decision-making processes.
- **Competency 3009.1.3: MoreStatistical Tools**
  The graduate uses quantitative techniques and statistical tools to identify the most appropriate decision alternatives.
- **Competency 3009.1.4: Quality Metrics and Tools**
  The graduate analyzes how work is accomplished and applies quality metrics and tools to increase efficiency, effectiveness, and quality.
- **Competency 3009.1.5: Real World Data-Driven Decisions**
  The graduate analyzes data from business intelligence and knowledge-management systems to make appropriate decisions.
- **Competency 3009.1.6: Improving Organizational Performance**
  The graduate uses appropriate data to improve organizational performance.

Course Instructor Assistance
As you prepare to demonstrate competency in this subject, remember that course instructors stand ready to help you reach your educational goals. As subject matter experts, course instructors enjoy and take pride in helping students become reflective learners, problem solvers, and critical thinkers. Course instructors are excited to hear from you and eager to work with you.

Successful students report that working with a course instructor is the key to their success. Course instructors are able to share tips on approaches, tools, and skills that can help you apply the content you are studying. They also provide guidance in assessment preparation strategies and troubleshoot areas of deficiency. Even if things do not work out on your first try, course instructors act as a support system to help you prepare for another attempt. You should expect to work with course instructors for the duration of your coursework, and you are encouraged to contact them as soon as you begin. Course instructors are fully committed to your success!

Preparing for Success

The information in this section is provided to detail the resources available for you to use as you complete this course.

Getting Started Guide

Before you dive into your course, spend some time with this Getting Started Guide. It will help prepare you for success with answers to frequently asked questions about the course, some tips to help you start strong, and a road map to follow through the course to ensure you are completing course activities at a pace recommended by the course instructors. You will also find contact information for the instructors who teach this course. You may want to print the guide and refer to it often.

Learning Resources

The learning resources listed in this section are required to complete the activities in this course. For many resources, WGU has provided automatic access through the course. However, you may need to enroll manually in or independently acquire other resources. Read the full instructions provided to ensure that you have access to all of your resources in a timely manner.

Automatically Enrolled Resources

You can access the learning resources listed in this section by clicking on the links provided throughout the course. You may be prompted to log in to the WGU student portal to access the resources.

MindEdge
You will access MindEdge learning modules for the following courseware at the activity level within this course.

MindEdge (2017). *Data-driven decision making.* Waltham, MA: MindEdge, Inc

Download Center-MindEdge

You may need to use some of the following programs to complete your performance assessment. Please go to the Download Center on MindEdge to download the program you need for your performance assessment.

- Microsoft Office

The following software is needed in order for Excel OM to function:

- Microsoft Office

If you need additional support or practice with Excel spreadsheets, you will find an optional spreadsheet module, Module 8, at the end of your MindEdge learning resource.

Supplemental Learning Resources

The following supplemental e-texts provide knowledge you may need to help you succeed in the assessments:

- Rugg, G. (2007). *Using statistics: A gentle introduction.* Berkshire, England: McGraw-Hill Education.

Minimum Technical Requirements

Obtain a Calculator
You will need a financial calculator for computational problems throughout this course. The recommended financial calculator is the Texas Instruments BA-II Plus. You may only use an approved calculator during the objective assessment for this course.

Topics and Pacing

This outline suggests a weekly structure to pace your completion of learning activities. It is provided as a suggestion and does not represent a mandatory schedule. Follow the instructions carefully to complete the course in the suggested timeframe.

Week 1

- Preparing for Success

- Performance Assessment Task 1 Preparation

Week 2 and Week 3

- The Case for Quantitative Analysis
- Statistics as a Managerial Tool

Week 4 and Week 5

- Quantitative Statistical Tools
- Performance Assessment Task 2 Preparation

Week 6

- Quality Management Basics

Week 7

- Real World Data-Driven Decisions
- Improving Organizational Performance
- Submit Task 2Data-DrivingDecision Making Performance Assessment

Week 8

- Case Studies
- Data-Driven Decision Making Objective Assessment

Check Your Readiness

Review the following resource to help you get ready for working with the details in the course.

Math Diagnostic and Preparation

Access the following Math Center EdReady course to help you identify areas in math where you may need additional development and assistance. Use the resource to help prepare for your readiness for the course.

- C207 Data-Driven Decision Making-Grad Math Preparation
- Instruction on How to Access the Course

Data-Driven Decision Making

There is an incomprehensible amount of data available now and it is growing every day. Managers need to know how to ask for, read, organize, interpret, and display data that is relevant to their business and decision making. This course introduces the vocabulary and models of data and statistics and helps students to use statistical tools and make decisions in business situations.

Performance Assessment Task 1 Preparation

Prepare for Task 1

This course is all about using data to make business decisions. In Task 1 of the performance assessment, you are going to be writing a business question, describing the data needed to answer the question, and then selecting the appropriate test to answer the question with the data collected.

To prepare for Task 1, use the following resource:

Task 1 Preparation

- The purpose of the Task 1 preparation is to introduce yourself to linear regression and how it is applied in a business scenario. You will learn more about regression in Module 3.

The purpose of the Task 1 preparation is to introduce yourself to types of statistical tests and examples. You will learn more about these tests in Modules 2 and 3.

After you have completed the preparatory material, as well as Modules 2 and 3, go to the "Assessments" tab and start Task 1 of the Performance Assessment.

Complete: Task 1

Remember, you should plan to submit Task 1 by the time you have completed Module 3.

Go to the "Assessments" tab, and complete**Data-Driven Decision Making Task 1**.

The Case for Quantitative Analysis

Business decisions must be based on relevant and reliable data. An intuition about what is happening is not enough. In this topic, you will examine principles that will help you assess the quality of data you use for decision making and applications in different settings.

This topic addresses the following competency:

- **Competency 3009.1.1: The Case for Quantitative Analysis**
  The graduate uses decision-making methods to develop strategies for organizational decision processes.

This topic highlights the following objectives:

- Explain why quantitative analysis and analytics is important in decision making.
- Explain the types of decisions that can be made analytically in an organizational setting.
- Describe different decision-making models and tools.
- Identify the fundamental concepts of measurement.
- Explain how data quality affects decision making.
- Describe methods to ensure the quality of data.
- Evaluate techniques for ensuring accurate research design.
- Describe how research is used in different settings.
- Explain when to use various data management techniques.
- Apply appropriate decision-making techniques to a specific case.

Complete: Module 1: The Case for Quantitative Analysis

Module 1 of *Data-Driven Decision Making* covers the following concepts:

- The definition of quality data
- How decision-making models and tools are used in different settings
- Applying appropriate tools and techniques in decision making

Access the following module and complete all sections, including the readings, videos, applied examples, and quizzes.

Read Module	ViewShort Videos and Slides	Complete Applied Examples /Games	Complete Quiz	Cohort Lecture Recordings and Slides
Module 1: The Case for Quantitative Analysis	"1.04-1.05Analytics and Big Data" • Video • Slides "1.08, 1.10, 1.14-1.16Levels of Measurement & Research Design" • Video • Slides	Applied Examples	Module1	Express 1 Cohort

	"1.09, 1.11-1.13 Data Management & Data Quality" • Video • Slides			

Statistics as a Managerial Tool

Once you have data, or evidence, related to a management issue, you need to analyze the data in a systematic and valid way. Several statistical methods can be used in business situations. This topic reviews some common statistical principles and methods and allows you to practice applying those methods in management situations.

This topic addresses the following competency:

- **Competency 3009.1.2: Statistics as a Managerial Tool**
  The graduate uses a variety of decision-analysis tools to evaluate alternatives during the decision making processes.

This topic highlights the following objectives:

- Describe how statistics are used in different settings.
- Describe common problems and misuse of statistics.
- Identify criteria for evaluating statistics.
- Identify the key fundamentals of probability and their real-world application.
- Identify the fundamental concepts of descriptive statistics and their real-world application.
- Select appropriate graphic methods for displaying descriptive statistics.
- Explain the fundamental concepts of inferential statistics and their real-world application.
- Evaluate a scenario in order to determine the appropriate statistic to use.
- Apply fundamental statistics to a real-world situation.
- Evaluate the appropriateness of statistics used.
- Use statistics to identify the most appropriate decision alternative.
- Translate statistical data into a graphical presentation based on a brief case study.

Complete: Module 2: Statistics as a Managerial Tool

Module 2 of*Data-Driven Decision Making*covers the following concepts:

- Appropriate use of statistical data
- Fundamental principles of probability
- Descriptive and inferential statistics
- Graphic displays of data

Access the following module and complete all sections, including the readings, videos, and quizzes.

Read Module	View Short Videos and Slides	Complete Applied Examples/Games	Complete Quiz	Cohort Lecture Recordings and Slides
Module 2: Statistics as a Managerial Tool	"2.04Misuse of Statistics" • Video • Slides "2.07Probability" • Video • Slides "2.08Bayes" • Video • Slides "2.10Measures of Central Tendency" • Video • Slides "2.11Measures of Variability" • Video • Slides "2.13Standard Scores (Z-Scores" • Video • Slides	More Practice with the Empirical Rule	Module2 Video Explanations: • Q1-Q5 • Q6-Q10 • Q11-Q15 • Q16-Q20 • Q21-Q25	Lecture Recordings: Express 2 Cohort

Quantitative Statistical Tools

Data does not exist in a vacuum. You can use different statistical tools to discover and analyze relationships within the data set or to determine how the data relate to the problem situation. The patterns in the data contribute to making appropriate business decisions.

This topic addresses the following competency:

- **Competency 3009.1.3: More Statistical Tools**
  The graduate uses quantitative techniques and statistical tools to identify the most appropriate decision alternatives.

This topic highlights the following objectives:

- Evaluate the usefulness of different statistical techniques and their real-world application.
- Describe the various types of regression analysis and their real-world application.
- Analyze the results of a regression analysis.
- Describe common problems with multiple regression.
- Describe other statistical techniques and their real-world application.
- Explain the advantages and disadvantages of various statistical techniques.
- Choose a statistical technique based on a brief case study.

Complete: Module 3: Quantitative Statistical Tools

Module 3 of *Data-Driven Decision Making* covers the following concepts:

- Quantitative statistical techniques
- Forecasting techniques and limitations
- Analyzing data using regression analysis
- Applying statistical techniques to real-world data

Access the following module and complete all sections, including the readings, videos, games, and quiz.

Read Module	View Short Videos and Slides	Complete Applied Examples /Games	Complete Quiz	Cohort Lecture Recordings and Slides
	"3.00 Statistical vs Decision Analysis" • Video • Slides "3.03, 3.17and 3.18Decision Analysis (Linear Programming, Cluster Analysis, Decision Tree)"			

Module 3: Quantitative Statistical Tools	• Video • Slides "3.04and 3.05Break Even and Cross Over Analysis" • Video • Slides "3.08 ANOVA" • Video • Slides "3.13Regression Analysis" • Video • Slides	"Jeopardy Game"	Module 3	Lecture recording: Express 3 Cohort

Performance Assessment Task 2 Preparation

Once you have passed Task 1, you can start on Task 2.

Prepare for Task 2

The learning resource provides a comprehensive example of using data to solve a problem, which is exactly what you will be doing in Task 2. Remember, you will now perform the statistical test that you selected in Task 1.

Task 2 Preparation

Quality Management Basics

After gathering data and analyzing it using statistical tools, managers need to implement improvements in their organizations. This topic introduces performance-improvement models and change-management processes as well as statistical methods to assess the effectiveness of these changes.

This topic addresses the following competency:

- **Competency 3009.1.4: Quality Metrics and Tools**
  The graduate analyzes how work is accomplished and applies quality metrics and tools to increase efficiency, effectiveness, and quality.

This topic highlights the following objectives:

- Describe principles that help guide quality management activities.
- Use the plan-do-check-act cycle to coordinate work and implement change.
- Explain the differences between quality control and quality assurance.
- Create a SIPOC diagram to help visualize work as a process.
- Explain the role that metrics and statistics play in measuring and controlling work processes.
- Apply analysis and planning approaches to quality.
- Explain how the seven basic quality tools are used to monitor and control quality processes.
- Use the seven basic quality tools to process and sort non-numerical data.
- Use seven basic quality tools in combination to create solutions to quality problems.
- Describe various quality management programs.
- Employ quality management tools based on a brief case study.

Complete: Module 4: Quality Management Basics

Module 4 of *Data-Driven Decision Making* covers the following concepts:

- How businesses measure operationalperformance
- What data can be used to get valid measurements
- What decisions are made based on the data
- How businesses evaluate the success of performance-measurement processes

Access the following module and complete all sections, including the readings, videos, applied examples, and quiz questions.

Read Module	View Short Video and Slides	Complete Applied Expamples/Games	Complete Quiz	Cohort Lecture Recordings and Slides
Module 4: Quality Management	"4.03-4.04 Quality Management" • Video • Slides "4.04-; 4.09, 4.11-4.12 Tools for Improving Quality" • Video • Slides "4.10 Statistical Process Control"	Applied Examples	Module4	Lecture recording Lecture slides Express 4 Cohort

	• Video • Slides			

Real-World Data-Driven Decisions

Gathering and analyzing data may be a fun way to pass time, but the real value comes in using that information to make decisions and improve businesses. In this topic you will examine real-world data and business situations from several different business types. You will apply the statistical methods you have learned to uncover effects of changes in those businesses and recommend further actions.

This topic addresses the following competency:

- **Competency 3009.1.5: Real World Data-Driven Decisions**
  The graduate analyzes data from business intelligence and knowledge-management systems to make appropriate decisions.

This topic highlights the following objectives:

- Describe the management implications of the use of business intelligence and knowledge management systems.
- Define big data and describe its current uses for analysis and future potential.
- Describe common analytics for business and quality improvement.
- Analyze the data set from a brief case study to recommend manufacturing business decisions based on data analytics.
- Describe common analytics used in healthcare.
- Analyze the data set from a brief case study to recommend healthcare decisions based on data analytics.
- Describe common analytics used in education.
- Analyze the data set from a brief case study to recommend educational decisions based on data analytics.
- Describe common analytics used in government.
- Analyze the data set from a brief case study to recommend governmental decisions based on data analytics.

Complete: Module 5: Real World Data-Driven Decisions

Module 5 of *Data-Driven Decision Making* covers the following concepts:

- How businesses use data to make decisions
- How businesses select appropriate models to use to analyze data
- Using the analysis models learned in previous modules

Access the following module and complete all sections, including the readings, videos, and quiz questions.

Read Module	View Short Videos and Slides	Complete Applied Examples/Games	Complete Quiz	Cohort Lecture Recordings and Slides
Module 5: Real-World Data-Driven Decisions	"5.03RBM" • Video • Slides "5.04 Business Improvement Analytics" • Video • Slides "5.06 Health Care Analytics" • Video • Slides "5.08 Education Analytics" • Video • Slides		Module5	Lecture recording Lecture slides Express 5 & 6 Cohort

Improving Organizational Performance

Successful businesses measure several aspects of performance. Not all measurements relate to business finances, but they usually affect the financial bottom line. This topic introduces some of the ways that businesses use data to measure and hopefully improve performance.

This topic addresses the following competency:

- **Competency 3009.1.6: Improving Organizational Performance**
  The graduate uses appropriate data to improve organizational performance.

This topic highlights the following objectives:

- Explain how performance measures are used in different settings.
- Differentiate among various organizational performance measurements.
- Describe the advantages and disadvantages of key performance indicators (KPIs).
- Describe the advantages and disadvantages of the balanced scorecard.
- Explain the relationship between performance assessment and organizational tactics and strategy.
- Assess the validity of performance measures for an organization based on a brief case study.

Complete: Module 6: Improving Organizational Performance

Module 6 of *Data-Driven Decision Making* covers the following concepts:

- How businesses measure performance
- What data can be used to get valid measurements
- What decisions are made based on the data

Access the following module and complete all sections, including the readings, videos, and quiz questions.

Read Module	View Short Videos Slides	Complete Applied Examples/Games	Complete Quiz	Cohort Lecture Recordings and Slides
Module 6: Improving Organizational Performance	"6.04 & 6.06 Performance Measures & KPIs" • Video • Slides "6.08 Balanced Scorecard" • Video • Slides "6.11 Net Promoter Score" • Video • Slides		Module6	Lecture recording Lecture slides Express Word Problem Review Cohort

Case Studies

The Module 7 Case Studies provide you with an opportunity to apply concepts and knowledge from Modules 1 through 6 to a simulated real-life scenario. Can you determine what analysis technique is needed for a given data situation? What type of graph is best suited for a particular set of data? These are examples of the kinds of questions you will be asked. Such practice can be beneficial in preparing for the objective assessment, which will also test your ability to apply course conceptual information to business scenarios.

You also have options in Module 7 to conduct analyses and create charts using Excel. Note that for your performance assessment you will also need to conduct an analysis of data and create an appropriate chart. However, you will not need to use Excel for the objective assessment.

Access the following module and complete all sections, including the readings, videos, and quiz questions.

Read Module	View Short Videos Slides	Complete Applied Examples/Games	Complete Quiz	Cohort Lecture Recordings and Slides
Module 7: Case Studies	7.01 & 7.02 Case Study: • Video • Slides 7.03 Local Housing Proposal: • Video • Slides 7.04 Min Develop Costs: • Video • Slides 7.05 Mkt Value Town Assets: • Video • Slides	Take the **Final Self-assessment** found in the last section of the textbook by MindEdge.		

	7.06 Comp Proposal: • Video • Slides 7.07 Concerns Cost Variance: • Video • Slides			

Complete the Performance and Objective Assessments

This course includes both an objective assessment and a performance assessment. You have already prepared for Task 2 of your performance assessment. Now it is time to submit it.

Complete: Performance Assessment Task 2

If you have not done so already, complete the Data-Driven Decision Making Task 2 by going to the " Assessments" tab in this course. You will find details about this performance assessment in the same tab.

Prepare for: Data-Driven Decision Making Objective Assessment

In addition to the learning resources you have already worked through, there are a few additional resources to help you prepare for the objective assessment.

- **Practice final assessment**. The MindEdge Final Self-Assessment in the learning resource will help you prepare for the objective assessment. Review any topics you have trouble with before attempting this final practice assessment. You will find this 40-question practice assessment at the end of all the MindEdge modules.
- **Flash cards.**These flash cards compiled by your course instructors will help you review the big concepts in the course, as well as some formulas and definitions.

Schedule: Data-Driven Decision Making Objective Assessment

Schedule your objective assessment. For details about how to access this objective assessment, see the "Assessments" tab in this course.

Final Steps

Congratulations on completing the activities in this course! This course has prepared you to complete the assessment associated with Data-Driven Decision Making. If you have not already been directed to complete it, schedule and complete the assessment now.