This course supports the assessments for QLC1. The course covers 4 competencies and represents 3 competency units.

**Introduction**

Welcome to the Quantitative Literacy program at Western Governors University!

Quantitative literacy is the ability to identify and solve real-world problems that require mathematical or quantitative problem-solving strategies and skills. In this course, you will learn to apply sound reasoning to mathematical representations of the real-world situations in order to find innovative solutions to the problems at hand. As you master the concepts in this course, you will become proficient in implementing a variety of problem-solving strategies inspired by real world, everyday situations. You will become an efficient problem solver and a practitioner of mathematics. By completing this course, you will see that learning mathematics is not only within reach but is also a worthwhile and practical pursuit.

Watch the following video introduction for 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 4 competencies:

- **Competency 212.1.1: Applying Basic Numeracy and Calculation Skills**
  - The graduate applies basic numeracy and calculation skills and algorithms in arithmetic and basic algebra.

- **Competency 212.1.2: Solving Algebraic Equations**
  - The graduate solves algebraic equations and constructs equations to solve real-world problems.

- **Competency 212.1.3: Functions**
  - The graduate understands and applies the basic properties of functions to solve problems.

- **Competency 212.1.4: Applying Geometric, Trigonometric, and Measurement Processes**
  - The graduate applies basic geometric, trigonometric, and measurement skills and processes to problems in mathematics as well as a variety of disciplines.

**Course Instructor Assistance**

As you prepare to successfully demonstrate competency in this subject, remember that course instructors stand ready to help you reach your educational goals. As subject matter experts, mentors 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're studying. They also provide guidance in assessment preparation strategies and troubleshoot areas of deficiency. Even if things don’t work out on your first try, course instructors act as a support system to guide you through the revision process. You should expect to work with course instructors for the duration of your coursework, so you are welcome 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.

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 manually enroll 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.

Learning 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.

QLC1 MyMathLab

You will use these interactive learning modules embedded throughout your Study Plan.

VitalSource E-Texts

The following textbook is available to you as an e-text within this course. You will be directly linked to the specific readings required within the activities that follow. This e-text is available to you as part of your program tuition and fees, but you may purchase a hard copy at your own expense through a retailer of your choice. If you choose to do so, please use the ISBN listed to ensure that you receive the correct edition.


Additional Preparations

Purchase a Calculator

Acquire a scientific calculator and familiarize yourself with how to use it. Refer to the Calculator Guidelines in the WGU Student Handbook for details regarding calculators that are acceptable on WGU exams. If you are in a secondary mathematics program, refer to the WGU Calculator Recommendations for Secondary Math and Science Programs document for calculator suggestions for your degree program.

Also, you may use a ruler, a compass, and a protractor as you work through this course and
during your final assessment.

Whiteboards

Whiteboards may be used to assist you as you complete the assessment for this course. Paper, or other note taking resources, may not be used during the assessment. For math assessments only, scratch paper can be used only when taking the assessment at an on-site testing center. Please view the following video for more information on how to use a whiteboard:

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

Complete the Course Student Self-Assessment

Complete the "Self-Assessment for Students" before you begin working through this course. You should use the student self-assessment as a self-reflection tool and informal measure of your competence.

Pacing Guide

The pacing guide 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 pacing guide carefully to complete the course in the suggested timeframe.

Note: This pacing guide does not replace the course. Please continue to refer to the course for a comprehensive list of the resources and activities.

Numeracy and Calculation Skills

Performing calculations using real numbers is a necessary proficiency in your quest for building competence in Quantitative Literacy.

In the activities that follow, you will learn to identify and manipulate real numbers and study real-world applications of real number calculations.

After completing the activities that follow, you will have developed competence in four topic areas:

Manipulating Real Numbers

- determining divisibility and writing factorizations of numbers
- expressing rational numbers in decimal, fraction, percent, and scientific notations
- ordering and manipulating rational numbers
- applying order of operations to various types of number calculations
- using rational and real numbers to solve real-world problems
• developing and simplifying algebraic expressions

Percents, Ratios, and Proportions

• calculating percents and percent change in real-world problems
• using ratios and proportions to solve scaling problems
• solving proportions using cross products

Unit 1: Manipulating Real Numbers
Throughout the following activities, you will investigate properties and algorithms for working with real numbers. Once you see how the calculations are done with everyday positive numbers, you will be able to easily transfer these operations to fractions and signed numbers. Learning to perform calculations with real numbers will help you become more proficient with your everyday math.

As you engage in the following learning activities, you will learn to manipulate real numbers and apply real numbers to real-world problems.

This topic addresses the following competency:

• 212.1.1: Applying Basic Numeracy and Calculation Skills
  The graduate applies basic numeracy and calculation skills and algorithms in arithmetic and basic algebra.

Discover Real Numbers

Could you imagine our world today without numbers and arithmetic? To many of you, a world without mathematics would be blissful. Well, at least at first thought. But, honestly, what would our world look like today if numbers and arithmetic didn't exist? We couldn't measure lengths or durations of time. We couldn't count objects or talk about how many. We couldn't quantify change. Addition, subtraction, multiplication, and division would be stricken from our vocabulary and absent from our world. Technology as we know it today would simply not exist. No cars. No television. No computers. No WGU. Sadly, our world would look nothing like it does today!

You see, mathematics was invented by ancient peoples and cultures to communicate ideas and to solve meaningful problems. Learning to think mathematically and to use mathematical ideas as part of the problem solving process has been and will continue to be vital to our success and to making the world a better place for our children.

In this module, you will focus your energies on so-called "real" numbers. Real numbers are numbers that really matter. They are whole numbers (2), decimals (4.5), fractions (1/2), percents (90%), and so much more. They are numbers we rely upon everyday, and numbers that facilitate advances in science and technology. In this module, you will explore arithmetic and applications of real numbers as well as the reasoning we use to solve meaningful, everyday problems.

Before moving forward with your studies, please take a moment to review the key concepts
you will be studying in this unit.

- Types of Numbers
  - Whole Numbers
  - Integers
  - Rational Numbers
  - Real Numbers
- Number Computations
  - Simple Arithmetic involving Whole Numbers, Decimals, Fractions, and Integers
  - Calculating Exponentials
  - Calculating Absolute Value
  - Calculating or Approximating Square Roots
  - Applying the Order of Operations Agreement
- Introductory Number Theory
  - Write the Prime Factorization of a Number
  - Identify the Greatest Common Factor for Two Numbers
  - Identify the Least Common Multiple for Two Numbers
- Knowledge of Various Number Notations
  - Transferring between Fraction, Decimal, Percent, and Scientific Number Notations
  - Ordering Numbers in Various Number Notations
- Foundations of Algebra and Algebraic Reasoning
  - Identifying Key Words for Arithmetic
  - Developing Algebraic Expressions for Real World Problems
  - Solving Simple Linear Equations
- Applications of Number Sets and Computations

Choose either the standard path or the accelerated path.

The standard path for completing this unit is:

**Step 1:** Complete the Unit 1 Homework with a score of at least 80%.

https://lrps.wgu.edu/provision/33866167

**Step 2:** Complete the post test. If you do not score 80% or better contact a Course Instructor for assistance.

https://lrps.wgu.edu/provision/33864960

**Step 3:** Complete the additional practice problems corresponding to each problem you missed on the Post-Test.

https://lrps.wgu.edu/provision/40100152
The accelerated path for completing this unit is:

**Step 1:** Take the Pre-Check. If you score below 80%, complete the standard path for this unit described above. If you score 80% or better, go to the next unit.

[https://lrps.wgu.edu/provision/33864914](https://lrps.wgu.edu/provision/33864914)

**Unit 3: Percents, Ratios, and Proportions**
If you start with familiar percentages and ratios, you will learn to calculate more difficult
examples easily. Throughout the following activities, you will investigate the relevant applications of these concepts in order to apply your learning to good consumer choices.

As you investigate percents, ratios, and proportions, you will develop an understanding of proportional reasoning and learn how to manipulate percents and proportions to solve real-world problems.

This topic addresses the following competency:

- 212.1.1: Applying Basic Numeracy and Calculation Skills
  The graduate applies basic numeracy and calculation skills and algorithms in arithmetic and basic algebra.

**Discover Percents, Ratios, and Proportions**

*Choose either the standard path or the accelerated path.*

The **standard path** for completing this unit is:

**Step 1:** Complete the Unit 3 Homework with a score of at least 80%.

[https://lrps.wgu.edu/provision/33866222](https://lrps.wgu.edu/provision/33866222)

**Step 2:** Complete the post test. If you do not score 80% or better contact a Course Instructor for assistance.

[https://lrps.wgu.edu/provision/33865238](https://lrps.wgu.edu/provision/33865238)

**Step 3:** Complete the additional practice problems corresponding to each problem you missed on the Post-Test.

[https://lrps.wgu.edu/provision/40100279](https://lrps.wgu.edu/provision/40100279)
The **accelerated path** for completing this unit is:

**Step 1:** Take the Pre-Check. If you score below 80%, complete the **standard path** for this unit described above. If you score 80% or better, go to the next unit.

https://lrps.wgu.edu/provision/33865208

**Algebra**

Connecting the English language to mathematics is a necessary proficiency in your quest for building competency in quantitative literacy.

In the activities that follow, you will learn how to translate verbal descriptions of real-world problems into algebraic expressions and equations so that you can use your reasoning skills to find relevant solutions to said problems. In the process, you will learn how to manipulate algebraic expressions and solve a wide variety of algebraic equations.

After completing the activities that follow, you will have developed competence in two topic areas:

**Algebraic Expressions and Equations**

- developing algebraic expressions and equations for real-world word problems
- manipulating algebraic expressions through applying the distributive law, collecting like terms, and applying factoring laws
- factoring algebraic expressions by using grouping, differences of squares, and sums of cubes strategies
- identifying equivalent algebraic expressions

**Solving Algebraic Equations**

- solving linear equations in one variable using inverse operations and the addition and multiplication principles in concert
- clearing decimals and fractions when working with algebraic equations
- solving quadratic equations in one variable using either the principle of square roots or factoring and the principle of zero products
- solving rational equations in one variable
- solving radical equations in one variable using the principle of squaring

**Unit 5: Algebraic Expressions and Equations**

Throughout the following activities, you will learn how to integrate your knowledge of the English language into mathematics. You will also study the foundations of algebra and see how simple it is to apply number rules to algebraic statements.

As you engage in the following learning activities, you will learn to write and manipulate
algebraic expressions and equations to solve real-world problems.

This topic addresses the following competencies:

- **212.1.2: Solving Algebraic Equations**
  The graduate solves algebraic equations and constructs equations to solve real-world problems.

**Discover Algebraic Expressions and Equations**

What’s algebra have to do with mathematics? Honestly!

In mathematics, we use letters, called variables, to represent important measurements (like distance or angle size) or quantities (like money or units of a product) that are not known to us at the moment, but highly desired. Variables often appear in expressions, equations, and formulas. But, really, where do expressions, equations, and formulas come from? The real world! Believe it or not, algebra was invented by ancient cultures as a problem solving strategy. More importantly, algebra remains to be one of the most productive problem solving strategies today. In fact, whether you are aware of it or not, you are faced with real world problems everyday where you use variables and algebraic reasoning.

Before moving forward with your studies, please take a moment to review the key concepts you will be studying in this unit.

- **The English Language and Translation to Algebra Expressions**
  - Key Words for Addition, Subtraction, Multiplication, and Division
  - Key Words for Equality

- **Simplifying Algebra Expressions to Identify Equivalent Expressions**
  - Applying the Distributive Law
  - Removing Parentheses and Collecting Like Terms
  - Factoring out the Greatest Common Factor

- **Polynomial Expressions and Arithmetic**
  - Adding and Subtracting Polynomials by Combining Like Terms
  - Multiplying Polynomials using the Laws of Exponents and the Distributive Law or FOIL

- **Factoring Polynomials**
  - General Strategies
    - Greatest Common Factor
    - Grouping Method
    - FOIL Method
  - Specific Factorizations
    - Factoring a Perfect Square Trinomial
    - Factoring a Difference of Squares
    - Factoring a Sum or Difference of Cubes
Choose either the standard path or the accelerated path.

The standard path for completing the Algebraic Expressions and Equations unit:

**Step 1:** Complete the Unit 5 Homework with a score of at least 80%

https://lrps.wgu.edu/provision/33866284

**Step 2:** Complete the post test. If you do not score 80% or better contact a Course Instructor for assistance.

https://lrps.wgu.edu/provision/33865351

**Step 3:** Complete the additional practice problems corresponding to each problem you missed on the Post-Test.

https://lrps.wgu.edu/provision/40100383

The accelerated path for completing the Algebraic Expressions and Equations unit:

**Step 1:** Take the Pre-Check. If you score below 80%, complete the standard path for this unit described above. If you score 80% or better, go to the next unit.
Unit 6: Solving Algebraic Equations

Throughout the following activities, you will learn the procedures for solving linear equations, quadratic equations, and other types. Remember, each type of equation has a solution procedure, so it is important that you search for and learn the procedure so you can apply your knowledge to solve a wide variety of algebraic equations.

As you engage in the following learning activities, you will learn to solve algebraic equations so you can solve real-world problems.

This topic addresses the following competencies:

- 212.1.2: Solving Algebraic Equations
  The graduate solves algebraic equations and constructs equations to solve real-world problems.

Discover Solving Algebraic Equations

Believe it or not, algebra was invented centuries ago as a problem-solving approach. Since then, algebra has developed into a particularly fruitful branch of mathematics, with real world applications in nearly all disciplines (science, anthropology, sociology, business management, health studies, and so on). More importantly, you and I are faced with real world problems each day where variables and algebra reasoning are used to help us find solutions. By studying algebra and its applications, you will become a practitioner of mathematics capable of answering questions like:

- How much longer will it take us to reach our destination if we slow down by 5 miles per hour?
- How high can that model rocket really get off the ground?
- How quickly can we get this job done if we work together?
- Which option is a better deal for me?

In this topic, you will focus on developing and solving different types of algebra equations. You will find that there are general rules for solving each type of equation. Be mindful of this fact as you work through the activities and resources in this module.

- Linear Equations
  - Solving Linear Equations using the Distributive Law and Addition & Multiplication Principles in Concert
  - Applications of Linear Equations
    - Perimeter Applications
    - Angle Sum Applications
    - Motion Applications
    - Commission Applications
    - Cost Applications
- Quadratic Equations
Choose either the standard path or the accelerated path.

The standard path for completing this unit is:

Step 1: Complete the Unit 6 Homework with a score of at least 80%.

https://lrps.wgu.edu/provision/33866317

Step 2: Complete the post test. If you do not score 80% or better contact a Course Instructor for assistance.

https://lrps.wgu.edu/provision/33865443

Step 3: Complete the additional practice problems corresponding to each problem you missed on the Post-Test.

https://lrps.wgu.edu/provision/40100402
The **accelerated path** for completing this unit is:

**Step 1:** Take the Pre-Check. If you score below 80%, complete the **standard path** for this unit described above. If you score 80% or better, go to the next unit.

https://lrps.wgu.edu/provision/33865402

**Functions**

Identifying patterns in number calculations and using patterns to solve problems is a necessary proficiency in your quest for building competency in quantitative literacy. Functions can be thought of as a mathematical process which explains an observed relationship or a general calculation approach.

In the activities that follow, you will learn how to define and manipulate functions to solve a wide variety of real-world problems.

After completing the activities that follow, you will have developed competence in two topic areas:

**Graphing (Equations and Inequalities)**

- identifying coordinates for graphed points
- graphing linear equations in two variables
- graphing quadratic equations in two variables
- graphing systems, or pairs, of linear equations in two variables
- solving systems of linear equations in two variables algebraically using either the Substitution Method or the Addition/Elimination Method
- graphing linear inequalities in one and two variables
- graphing systems of linear inequalities in two variables

**Functions**

- evaluating functions and understanding function notation
- describing key graphical features of a given function (intercepts, asymptotes, extrema)
- calculating function inverses
- manipulating function rules and graphs to solve real-world problems

**Unit 7: Graphing**

Your knowledge of graphing points on a real number line and the coordinate plane can extend naturally to graphing equations and even inequalities. Just as there are general procedures for solving linear equations and quadratic equations, there are general procedures for graphing
linear equations and quadratic equations. Make sure you search out and learn the procedures so you can apply your knowledge to solve a wide variety of algebraic equations.

As you engage in the following learning activities, you will learn how to graph equations to visually illustrate solutions to real-world problems.

This topic addresses the following competency:

- **212.1.3 - Functions**
  The graduate understands and applies the basic properties of functions to solve problems.

**Discover Graphing**

Have you ever heard the expression: "An algebra equation is worth a thousand words"? Of course not! I bet you have heard a similar expression: "A picture is worth a thousand words." Indeed, pictures communicate concepts and ideas that would otherwise be difficult to communicate with words.

French scholar and mathematician Rene Descartes was onto this idea centuries ago when he invented graphing as a framework for “visualizing” or “seeing” algebra. This new method for studying algebra was revolutionary as it allowed us to explore equations visually and characterize them by their geometries (appearances). In doing so, mathematicians discovered that patterns exist between equations and their graphs. So-called “linear” equations graph straight lines and “quadratic” equations graph smooth U-shaped curves called parabolas. Although graphing seemed like a simple contribution at the time, it has proven to be a timeless problem solving strategy.

Before moving forward with your studies, please take a moment to review the **key concepts** you will be studying in this unit.

- Graphing Points and the Cartesian Coordinate Plane
  - Axes and Quadrants
  - Coordinates and Ordered Pairs
- Graphing Equations in Two Variables
  - Graphing Linear Equations in Two Variables
  - Graphing Quadratic Equations in Two Variables
- Systems of Linear Equations in Two Variables
  - Solving a System of Linear Equations Graphically
  - Solving a System of Linear Equations Algebraically
    - Substitution Method
    - Elimination Method
- Inequalities
  - Linear Inequalities in Two Variables
  - Systems of Linear Inequalities in Two Variables

*Choose either the standard path or the accelerated path.*
The **standard path** for completing this unit:

**Step 1:** Complete the Unit 7 Homework with a score of at least 80%.

[https://lrps.wgu.edu/provision/33866342](https://lrps.wgu.edu/provision/33866342)

**Step 2:** Complete the post test. If you do not score 80% or better contact a Course Instructor for assistance.

[https://lrps.wgu.edu/provision/33865542](https://lrps.wgu.edu/provision/33865542)

**Step 3:** Complete the additional practice problems corresponding to each problem you missed on the Post-Test.

[https://lrps.wgu.edu/provision/40100473](https://lrps.wgu.edu/provision/40100473)

The **accelerated path** for completing the Graphing unit:

**Step 1:** Take the Pre-Check. If you score below 80%, complete the **standard path** for this unit described above. If you score 80% or better, go to the next unit.

[https://lrps.wgu.edu/provision/33865500](https://lrps.wgu.edu/provision/33865500)

**Unit 8: Functions**

Throughout the following activities, you will investigate patterns and learn to define and manipulate functions. Functions are used in science, engineering, programming, and business to describe and define important relationships within each field.
As you engage in the following learning activities, you will learn how to incorporate functions in your problem solving toolbox so that you can search out relevant solutions to real-world problems.

This topic addresses the following competency:

- **212.1.3 - Functions**
  The graduate understands and applies the basic properties of functions to solve problems.

**Discover Functions**

What do you think of when you hear the word "function." I bet you are thinking of an object that serves some purpose, like the function of a snow shovel (to move snow) or the function of an oven (to bake food). In mathematics, a function defines a relationship between at least two variables. Mathematical functions indeed serve a purpose -- they clearly explain how one variable is related to a second variable. It may be a surprise to you right now, but the concept of “function” is not new to you. You have been secretly studying functions all along.

In the Real Numbers module, you discovered that you can find the amount of money you have earned for working a specified number of hours at $12.00 per hour by taking 12 and multiplying it by the number of hours worked.

Money Earned = 12.00 Wage * Hours Worked

This concept and its associated equation defines a function, or relationship, between two variables, money earned and hours worked.

In the Algebra Equations module, you discovered how to determine the distance you have traveled by car if your car is moving 60 miles per hour for specified amount of time: distance traveled is the product of 60 and the number of hours you have traveled.

Distance Traveled = 60 mph Speed * Hours Traveled

This concept and its associated equation defines a function, or relationship, between two variables, time traveled and distance traveled.

In this module, you will learn the language and purpose of functions. Along the way, you will discover how to recognize mathematical functions, and more importantly, how to define mathematical functions using words, tables of values, equations, and graphs.

Before moving forward with your studies, please take a moment to review the **key concepts** you will be studying in this unit.

- Function Concepts and Notation
  - Domain of a Function
  - Evaluating Functions
Manipulating Functions to Solve Real World Problems
- Inverse Functions

- Graphical Features of Mathematical Functions
  - X-Intercepts and y-Intercept
  - Rate of Change for a Linear Function
  - Writing an Equation for a Line
  - Maximum Value or Minimum Value of Quadratic Functions
  - Vertical Asymptotes for Rational Functions

Choose either the standard path or the accelerated path.

The **standard path** for completing this unit is:

**Step 1:** Complete the Unit 8 Homework with a score of at least 80%.

[https://lrps.wgu.edu/provision/33866361](https://lrps.wgu.edu/provision/33866361)

**Step 2:** Complete the post test. If you do not score 80% or better contact a Course Instructor for assistance.

[https://lrps.wgu.edu/provision/33865587](https://lrps.wgu.edu/provision/33865587)

**Step 3:** Complete the additional practice problems corresponding to each problem you missed on the Post-Test.

[https://lrps.wgu.edu/provision/40100523](https://lrps.wgu.edu/provision/40100523)
The **accelerated path** for completing this unit is:

**Step 1:** Take the Pre-Check. If you score below 80%, complete the **standard path** for this unit described above. If you score 80% or better, go to the next unit.

https://lrps.wgu.edu/provision/33865568

**Geometry and Measurement**

Many physical objects were created with measurement and geometry in mind. Homes and office buildings, roads and bridges, and computers and televisions are all created to meet the needs and expectations of consumers. Undoubtedly, geometry and measurement are instrumental in the design and development processes so that the end products are stable, reliable, and functional. Knowledge of standard measurements and geometry concepts are necessary proficiencies in your quest for building competency in quantitative literacy.

After completing the activities that follow, you will have developed competence in two topic areas:

**Geometric Figures and Measures**

- defining and identifying standard geometry figures, including angles, circles, polygons, and solids
- constructing and deconstructing standard solid geometry figures
- identifying and applying angle relationships to solve real-world problems
- defining and calculating perimeter, area, surface area, and volume for standard geometry figures
- applying proportional reasoning to triangles to solve real-world problems

**Pythagorean Theorem**

- applying the Pythagorean Theorem to right triangles

**Trigonometry**

- applying trigonometry to right triangles

**Unit Conversion Concepts**

- defining standard measurements such as length, weight, mass, volume/capacity, time, and temperature
- converting between units within the standard U.S. system and within the metric system

**Unit 9: Geometric Figures and Measures**

Throughout the following activities you will become acquainted with standard geometry figures and investigate geometry measurements. Once you see how the measurements are done with everyday figures, you will be able to easily transfer these measurement concepts to complex
figures using both formulas and reasoning.

This topic addresses the following competency:

- 212.1.4: Applying Geometric, Trigonometric, and Measurement Processes
  The graduate applies basic geometric, trigonometric, and measurement skills and processes to problems in mathematics as well as a variety of disciplines.

**Discover Geometric Figures and Measures**

In this module, you will learn about many different geometric figures and properties. You will work with formulas to measure geometric figures and apply different strategies to solve problems involving figures.

Before moving forward with your studies, please take a moment to review the key concepts you will be studying in this unit.

- Knowledge of Geometric Figures
  - Classifying Geometric Objects
    - 2-dimensional or Planar Objects
    - 3-dimensional or Solid Objects
  - Naming and Describing Geometric Objects
    - Perpendicular and Parallel Lines
    - Acute, Right, Obtuse, and Straight Angles
    - Circles and Standard Polygons
      - Types of Polygons: Triangles, Quadrilaterals, Pentagons, etc.
        - Types of Triangles: Acute, Right, Obtuse, Scalene, Isosceles, and Equilateral
        - Types of Quadrilaterals: Squares, Rectangles, Rhombuses, Parallelograms, and Trapezoids
    - Types of Solids: Rectangular Prism, Cubes, Triangular Prism, Cylinder, Pyramid, and Sphere
- Knowledge of Geometric Measurements
  - Radius, Diameter, and Circumference for Circles
  - Perimeter for Polygons
  - Area for Circles, Standard Polygons, and Composite Polygonal Figures
  - Surface Area for Solids
  - Volume for Standard Solids and Composite Solid Figures
- Noteworthy Angle Relationships
  - Supplementary, Complementary, and Vertical Angles
  - Interior and Exterior Angles for Parallel Lines Cut by a Transversal
  - Interior and Exterior Angles of Polygons
  - Sum of Interior Angles for Polygons
- Congruence and Similarity of Geometric Figures
  - Congruent Figures
  - Similar Figures and Proportional Reasoning
- Applications of Geometric Concepts and Measurements
Applications of Perimeter, Area, and Volume
Applications of Similarity and Proportionality

**Choose either the standard path or the accelerated path.**

The **standard path** for completing this unit is:

**Step 1:** Complete the Unit 9 Homework with a score of at least 80%.

https://lrps.wgu.edu/provision/33866410

**Step 2:** Complete the post test. If you do not score 80% or better contact a Course Instructor for assistance.

https://lrps.wgu.edu/provision/33865773

**Step 3:** Complete the additional practice problems corresponding to each problem you missed on the Post-Test.

https://lrps.wgu.edu/provision/40100559
The accelerated path for completing this unit is:

**Step 1**: Take the Pre-Check. If you score below 80%, complete the standard path for this unit described above. If you score 80% or better, go to the next unit.

https://lrps.wgu.edu/provision/33865704

**Unit 10: Pythagorean Theorem**

Throughout the following activities, you will see how the Pythagorean theorem is applied to right triangles. You will discover that you will not need a tape measure to determine the length of a missing side of a right triangle. Rather, you can use simple multiplication, addition, and square roots to solve for the length of a missing side. Remember, this works for any right triangle, so the real-world applications of this theorem are unlimited.

This topic addresses the following competency:

- 212.1.4: Applying Geometric, Trigonometric, and Measurement Processes
  The graduate applies basic geometric, trigonometric, and measurement skills and processes to problems in mathematics as well as a variety of disciplines.

**Discover the Pythagorean Theorem**

Before moving forward with your studies, please take a moment to review the key concepts you will be studying in this unit.

- Solving Right Triangles using the Pythagorean Theorem
  - Calculating the Length of a Missing Leg
  - Calculating the Length of the Missing Hypotenuse
  - Determining if a Given Triangle is a Right Triangles using the Pythagorean Theorem
  - Applications of the Pythagorean Theorem
    - Calculating the Dimensions of a Television Set

**Choose either the standard path or the accelerated path.**

The standard path for completing this unit is:

**Step 1**: Complete the Unit 10 Homework with a score of at least 80%.

https://lrps.wgu.edu/provision/33866484
Step 2: Complete the post test. If you do not score 80% or better contact a Course Instructor for assistance.

https://lrps.wgu.edu/provision/33865874

Step 3: Complete the additional practice problems corresponding to each problem you missed on the Post-Test.

https://lrps.wgu.edu/provision/40100569

The accelerated path for completing this unit is:

Step 1: Take the Pre-Check. If you score below 80%, complete the standard path for this unit described above. If you score 80% or better, go to the next unit.

https://lrps.wgu.edu/provision/33865830

Unit 11: Geometry and Trigonometry
Throughout the following activities, you will investigate how trigonometry applies to right triangles. By using a scientific calculator and the trigonometric relationships, you will be able to solve for both side lengths and angle measures of right triangles. Trigonometry works for any right triangle, so the applications are multiple.

As you work through the resources for this topic, you will understand how to solve basic trigonometric problems.

This topic addresses the following competency:

- 212.1.4: Applying Geometric, Trigonometric, and Measurement Processes
  The graduate applies basic geometric, trigonometric, and measurement skills and processes to problems in mathematics as well as a variety of disciplines.

Discover Trigonometry

Before moving forward with your studies, please take a moment to review the key concepts you will be studying in this unit.
- Solving Right Triangles using Trigonometry Ratios
  - Calculating the Length of a Missing Leg or Hypotenuse
  - Calculating the Measure of a Missing Angle
- Applications of Trigonometry

Choose either:

The **standard path** for completing this unit is:

**Step 1:** Complete the Unit 11 Homework with a score of at least 80%.

[https://lrps.wgu.edu/provision/33866513](https://lrps.wgu.edu/provision/33866513)

**Step 2:** Complete the post test. If you do not score 80% or better contact a Course Instructor for assistance.

[https://lrps.wgu.edu/provision/33865932](https://lrps.wgu.edu/provision/33865932)

**Step 3:** Complete the additional practice problems corresponding to each problem you missed on the Post-Test.

[https://lrps.wgu.edu/provision/40100628](https://lrps.wgu.edu/provision/40100628)

The **accelerated path** for completing this unit is:

**Step 1:** Take the Pre-Check. If you score below 80%, complete the **standard path** for this unit described above. If you score 80% or better, go to the next unit.

[https://lrps.wgu.edu/provision/33865900](https://lrps.wgu.edu/provision/33865900)

**Unit 13: Unit Conversion Concepts**

Throughout the following activities, you will investigate how simple it is to transfer from one unit to another. The unit conversions you will study will encompass both metric and standard U.S. systems so that you are knowledgeable wherever your travels may take you. Simple basic steps will help you gain an understanding to help you convert between any two units you choose. This is helpful in everyday life, and relevant examples will be offered in the activities that follow.
As you work through the activities for this topic, you will study metric and standard units and learn conversion rates.

This topic addresses the following competency:

- **212.1.4: Applying Geometric, Trigonometric, and Measurement Processes**

  The graduate applies basic geometric, trigonometric, and measurement skills and processes to problems in mathematics as well as a variety of disciplines.

**Discover Unit Conversion**

Before moving forward with your studies, please take a moment to review the key concepts you will be studying in this unit.

- **Defining Standard Measurements**
  - Length
  - Weight
  - Mass
  - Volume (Capacity)
  - Time
  - Temperature

- **Converting Between Measurement Units**
  - Converting between American Units
  - Converting between Metric Units

*Choose either the standard path or the accelerated path.*

The **standard path** for completing this unit is:

**Step 1:** Complete the Unit 13 Homework with a score of at least 80%.

[https://lrps.wgu.edu/provision/33866566](https://lrps.wgu.edu/provision/33866566)

**Step 2:** Complete the post test. If you do not score 80% or better contact a Course Instructor for assistance.

[https://lrps.wgu.edu/provision/33866105](https://lrps.wgu.edu/provision/33866105)

**Step 3:** Complete the additional practice problems corresponding to each problem you missed on the Post-Test.

[https://lrps.wgu.edu/provision/40100689](https://lrps.wgu.edu/provision/40100689)
The **accelerated path** for completing this unit is:

**Step 1:** Take the Pre-Check. If you score below 80%, complete the **standard path** for this unit described above. If you score 80% or better, go to the next unit.

https://lrps.wgu.edu/provision/33866071

**Gradebook**

Check your progress and scores within MyMathLab

https://lrps.wgu.edu/provision/34035817

**Final Steps**

Congratulations on completing the activities in this course! This course has prepared you to complete the assessments associated with this course. If you have not already been directed to complete the assessments, schedule and complete your assessments now.