

Math 351- Instructional Objectives and Student Learning Outcomes

The goals of this course are to reacquaint students with the fundamentals of arithmetic and to provide them with the necessary skills for success in algebra.

Instructional Objective Students enrolled in this class will:	Corresponding Learning Outcomes Students that successfully complete this course will be able to:
1. Review arithmetic computations with whole numbers, fractions and decimals.	a. Read and write the names of whole and decimal numbers. b. Add, subtract, multiply and divide whole and decimal numbers and fractions. c. Recognize and use the Associative, Commutative and Distributive Laws of Arithmetic. d. Recognize the place value of digits in whole numbers and decimals. e. Place whole numbers, fractions and decimals on a number line. f. Write whole numbers in standard and expanded form. g. Round numbers to a given place value. h. Find the prime factorization of a whole number. i. Find the GCF and the LCM of a set of whole numbers. j. Reduce a fraction to lowest terms. k. Write an improper fraction as a mixed number and a mixed number as an improper fraction. l. Convert a fraction to a decimal and a repeating or terminating decimal to a fraction. m. Find the square root of a number. (Perfect squares only) n. Simplify numerical expressions with integer exponents. o. Write a number in scientific notation. p. Perform operations in scientific notation. q. Use the order of operations. r. Solve application problems using arithmetic. s. Use estimating in problem solving.
2. Learn to use ratios, proportions and conversions among measurements.	a. Distinguish between ratios and rates. b. Write ratios as fractions. c. Solve proportions. d. Solve applications problems using ratios and proportions. e. Convert units of measure. f. Solve problems using basic units of time, length, area and volume in both the metric and US customary units.
3. Learn how to compute and use percents.	a. Convert between percents and fractions. b. Convert between percents and decimals. c. Formulate and solve basic percent word problems. d. Formulate and solve percent increase, decrease, and mark-up and discount application problems.
4. Learn the fundamentals of plane and solid geometry.	a. Find the perimeter and area of common plane figures. b. Find the volume of common solids. c. Solve application problems involving the formulas of perimeter, area and volume. d. Use the Pythagorean Theorem to solve right triangles and their applications.
5. Learn arithmetic computations with signed numbers.	a. Add, subtract, multiply and divide real numbers. b. Place real numbers on a number line.

	c. Use the order of operations.
6. Learn to work with algebraic expressions and solve linear equations.	<ul style="list-style-type: none"> a. Use commutative, associative and distributive properties to combine like terms. b. Use the properties of exponents. c. Multiply expressions that involve monomials and binomials. d. Find the GCF and the LCM of a set of monomials. e. Divide a polynomial by a monomial. f. Substitute values into expressions and equations. g. Translate simple sentences into algebraic equations. h. Determine whether a given number is a solution of an equation. i. Use the addition and multiplication properties of equality to solve linear equations j. Solve application problems using linear equations.
7. Learn how to use and read graphs and work with data.	<ul style="list-style-type: none"> a. Recognize and use different types of graphs. b. Calculate the arithmetic mean and a weighted mean. c. Identify the features of the Cartesian plane. d. Plot points in the Cartesian plane.