

# MTH 015 : BASIC MATHEMATICS

## Transcript title

Basic Mathematics

## Credits

4

## Grading mode

Standard letter grades

## Total contact hours

40

## Lecture hours

40

## Recommended preparation

Minimum placement Math Level 4.

## Course Description

Introduces mathematics and its application, explains language and symbols used in math, develops concepts in whole numbers, fractions, decimals, percents, ratio, proportion, and integers, while emphasizing study and learning skills necessary for success in math courses and overcoming anxiety toward math.

## Course learning outcomes

1. Demonstrate fluency with basic whole number and fraction computations.
2. Demonstrate conceptual understanding of basic decimal and percent applications.
3. Recognize ratio and proportion problems, and use appropriate techniques to solve them.
4. Perform integer computations.
5. Apply learning strategies that support successful course completion.
6. Model and solve applied and theoretical mathematical problems including area and perimeter of rectangles, and money.

## Content outline

Whole Numbers: Demonstrate fluency with basic whole number and fraction computations. • Write the word name for a number and write the number for a word name • Use rectangles to model multiplication • Describe and use divisibility rules for 2, 3, 4, 5, 6, 8, 9, and 10 • Distinguish between prime and composite numbers • Use divisibility rules to determine factors of a given number • Write numbers as a product of prime numbers (with and without exponents) • Determine the least common multiple given two or three numbers • Use correct order of operations to simplify expressions involving whole numbers • Use symbolic notation for “less than” and “greater than” to compare whole numbers • Round whole numbers to the nearest ten, hundred, or thousand • Know that division by zero is undefined • Evaluate expressions with whole number exponents Fractions: Demonstrate fluency with basic whole number and fraction computations. • Use fraction kits or strips to describe concepts and computations involving fractions • Convert between mixed numbers and improper fractions • Simplify a fraction

to lowest terms • Create equivalent fractions with a least common denominator given two or three fractions • Perform computations and solve problems involving fractions without the use of a calculator • Use correct order of operations to simplify expressions involving fractions • Use symbolic notation for “less than” and “greater than” to compare fractions Decimals and Percents: Demonstrate conceptual understanding of basic decimal and percent applications. • Write a word name for a decimal • Convert between fractions and decimals • Compute with decimals in context, primarily money based • Write a percent as a fraction • Write a percent as a decimal • Know or be able to convert between equivalent fraction, decimal and percent forms of common fractions (denominators of 2, 3, 4, 5, 6, 8 and 10) • Solve percent problems of the form, “What is p% of w?” • Round decimals to tenths, hundredths, or thousandths Ratio and Proportion: Recognize ratio and proportion problems, and use appropriate techniques to solve them. • Use a ratio to compare two quantities with the same units • Use a rate to compare two quantities with different units • Write proportions • Find the missing number in a proportion • Solve applied problems using proportions Integers: Perform integer computations. • Add, subtract, multiply and divide integers. Applications: Model applied and theoretical mathematical problems including area and perimeter of rectangles, and money. • Solve applied problems involving whole numbers, fractions and decimals. Student Success Strategies: Apply learning strategies that encourage successful course completion • Assess entry level attitudes and habits related to successful course completion • Identify key steps in course preparation • Classroom engagement • Class notes and text material • Homework • Test preparation • Practice a variety of test study strategies

## Required materials

Required textbook(s).