**SOUTHEAST COMMUNITY COLLEGE**
**DIVISION OF ARTS AND SCIENCES**
**Mathematics**
**Revision Date: 7-01-24**

## I. CATALOG DESCRIPTION

| | |
|---|---|
| Course Number: | MATH0900 |
| Course Title: | Math Fundamentals |
| Prerequisite(s): | Appropriate score on math placement test |
| Catalog Description: | Review of operations with whole numbers; study of exponents, factors, prime factorization, GCF and LCM/LCD; operations and order of operations with integers, fractions, mixed numbers and decimals; study of converting fractions to decimals and decimals to fractions, ratios, rates, proportions and percents; study of perimeter, area and volume; study of simplifying algebraic expressions, exponent rules, solving algebraic equations, and applications of algebraic equations. |
| Credit Hours: | 3 |
| Class Hours: | 45 |
| Lab Hours: | 0 |
| Total Contact Hours: | 45 |

## II. COURSE OBJECTIVES. *Course will:*

**A**. Develop computational skills for whole numbers, integers, fractions, and decimals.
**B**. Develop techniques for simplifying mathematical expressions containing whole numbers, integers, fractions, decimals and exponents using the order of operations.
**C**. Develop techniques for converting fractions to decimals and decimals to fractions.
**D**. Develop techniques for solving application/word problems involving whole numbers, integers, fractions, and decimals.
**E**. Develop techniques for converting fractions to decimals and decimals to fractions.
**F**. Develop a basic familiarity with variables and algebraic expressions.
**G**. Develop a conceptual understanding of ratios, rates, proportions, and percents.
**H**. Develop techniques for converting fractions and decimals to percents and vice versa.
**I**. Develop techniques for solving application/word problems involving ratios, rates, proportions, and percents using the percent equation and the percent proportion.
**J**. Develop techniques for solving one step and multiple step equations.
**K**. Develop techniques for simplifying algebraic expressions.
**L**. Develop techniques for solving linear equations.
**M**. Find perimeter and area of polygons.
**N**. Find circumference and area of circles.
**O**. Find volume of rectangular prisms, cylinders, and spheres.

## III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

**A.** Student Learning Outcomes**:** *Student will be able to:*

**1**. Add, subtract, multiply, and divide whole numbers, integers, fractions, decimals and mixed numbers.
**2**. Apply the order of operations to simplify expressions involving whole numbers, integers, and fractions.
**3**. Simplify mathematical expressions containing whole numbers, integers, exponents, decimals, and fractions.
**4**. Solve word problems involving whole numbers, integers, and fractions.
**5**. Convert fractions to decimals and decimals to fractions.
**6**. Convert percents to decimals or fractions.
**7**. Convert decimals and fractions to percents.

**8**. Solve application/word problems involving ratios, rates, proportions, and percents.
**9**. Recognize variables and like terms.
**10**. Solve basic one-step and multiple step linear equations.

**B.** General Education Learning Outcomes
**1**. GELO #5: Analytical, Quantitative, and Scientific Reasoning
Outcome: Effectively develop strategies, algorithms, or experiments (or performing experiments) to better describe the systems or to solve the problems.
Outcome: Manipulate formulas, data sets, graphs, tables, etc. in a way to produce a meaningful outcome.

## IV. CONTENT/TOPICAL OUTLINE (*course outline may provide more detailed information*)

**A.** The following topics will be covered in the course:
**1**. Operations with whole numbers.
**2**. Order of operations with exponents and whole numbers.
**3**. Application/word problems using whole numbers.
**4.** Operations with integers.
**5**. Factors, prime factors, GCF.
**6**. Multiplication and division of fractions.
**7**. LCM/LCD.
**8**. Addition and subtraction of fractions.
**9**. Application problems using fractions.
**10.** Operations with mixed numbers/improper fractions.
**11**. Operations with decimals.
**12**. Order of operations with mixed numbers, fractions, and decimals.
**13**. Converting decimals to fractions and fractions to decimals.
**14**. Ratios.
**15**. Rates.
**16**. Proportions.
**17**. Percent notation.
**18**. Percent/decimal/fraction conversion.
**19**. Percent equation.
**20**. Percent proportion.
**21**. Application of percents.
**22**. Perimeter, Area and Volume.
**23**. Algebraic Expressions and Equations and Applications.

## V. INSTRUCTIONAL MATERIALS

**A**. Required Text(s):
**1.** MyMathLabPlus Direct Digital Access, Pearson.
ISBN-10: 0-558-92718-1.

## VI. METHODS OF PRESENTATION/INSTRUCTION

**A** Methods of presentation typically include a combination of following:
**1**. Lecture/Demonstration.
**2**. Guided in class activities, sometimes with manipulatives.
**3**. Guided Practice.

## VII. METHODS OF EVALUATION

**A.** Methods of evaluation typically include a combination of the following:
**1**. Participation
**2**. Quizzes and/or homework

**3**. Exams

**4**. Comprehensive Final Exam

**B.** SCC GRADING SCALE

| | | | | | |
|---|---|---|---|---|---|
| A+ | 95-100 | C+ | 75-79 | F | 59 or less |
| A | 90-94 | C | 70-74 | | |
| B+ | 85-89 | D+ | 65-69 | | |
| B | 80-84 | D | 60-64 | | |

## VIII. SPECIFIC COURSE REQUIREMENTS

**A**. None.