

Montgomery County Community College  
MAT 085  
Fundamentals of Mathematics  
0-4-2

**COURSE DESCRIPTION:**

A fundamental course in basic mathematical skills with an introduction to algebraic concepts. This course does not offer degree credit. Topics include solving linear equations, graphing principles, scientific notation, operations on signed numbers, fractions, decimals, percents, and other arithmetic topics. This precollege level course cannot be used to fulfill a degree requirement nor is it calculated in a student's Grade Point Average (GPA); however, the credits billed will be applied towards a student's financial aid enrollment status and enrollment status reported to the National Student Clearinghouse.

**REQUISITES:**

*Previous Course Requirements*

- \* None

*Concurrent Course Requirements*

- \* None

**COURSE COMMENTS**

- \* Course requires Math placement test
- \* Accepted Math placement test scores include a Next-Generation Accuplacer Arithmetic Test Score of 0 to 300 or a Next-Generation Accuplacer Quantitative Reasoning, Algebra and Statistics Test Score of less than 238.

LEARNING OUTCOMES Upon successfully completing this course, the student will be able to	LEARNING ACTIVITIES	EVALUATION METHODS
1. Discuss the contributions of ancient civilizations to our present system of numbers.	Lecture Group Work	Assignments Test
2. Classify and locate real numbers.	Discovery Activities Group Work	Assignments Test
3. Compare numbers.	Discovery Activities Group Work	Assignments Test
4. Combine real numbers and solve addition applications.	Discovery Activities Group Work	Assignments Test
5. Find the differences of real numbers and solve subtraction applications; solve equations.	Discovery Activities Group Work	Assignments Test

LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHODS
6. Compute the product of real numbers and solve multiplication applications.	Discovery Activities Group Work	Assignments Test
7. Compute the quotient of real numbers; solve division applications; solve equations.	Discovery Activities Group Work	Assignments Test
8. Solve multiple step problems.	Discovery Activities Group Work	Assignments Test
9. Demonstrate an ability to perform higher level mathematics reasoning beyond computation skills.	Discovery Activities Group Work	Assignments Tests (units 4, 5, 6 & 7)
10. Use signed numbers, variables, distributive property, combining like terms appropriately.	Discovery Activities Group Work	Assignments Test
11. Solve linear and literal equations.	Discovery Activities Group Work	Assignments Test
12. Solve applications of linear equations and percentages.	Discovery Activities Group Work	Assignments Test
13. Solve applications of ratio and proportion problems.	Discovery Activities Group Work	Assignments Test
14. Understand and use the Cartesian coordinate system in graphing lines: vertical and horizontal lines, x and y-intercepts, changes to the horizontal and vertical scales of a graph.	Discovery Activities Group Work	Assignments Test
15. Gain confidence in performing math skills.	Continuous Positive Reinforcement Focused Test Preparation Self-Reflection Activities	Pre and Post Math Anxiety Test

At the conclusion of each semester/session, assessment of the learning outcomes will be completed by course faculty using the listed evaluation method(s). Aggregated results will be submitted to the Associate Vice President of Academic Affairs. The benchmark for each learning outcome is that *70% of students will meet or exceed outcome criteria.*

## SEQUENCE OF TOPICS:

1. History of Numbers
2. The Real Number System
3. Comparing Numbers
4. Addition
5. Subtraction
6. Multiplication
7. Division
8. Combinations
9. Solving Literal Equations
10. The Cartesian Coordinate System and Linear Graphs
11. Scientific Notation

## LEARNING MATERIALS:

Textbook:

Lontz, Barbara (2017). *Concepts of Numbers for Arithmetic and Prealgebra* 6th ed.  
Pearson Learning Solutions.

## COURSE APPROVAL:

Prepared by: James Muscatell

Date: 3/10/2019

VPAA/Provost or designee Compliance Verification:

Date: 3/14/2019



*This course is consistent with Montgomery County Community College's mission. It was developed, approved and will be delivered in full compliance with the policies and procedures established by the College.*