

**J. Sargeant Reynolds Community College  
Course Content Summary**

**Course Prefix and Number: MTE 3**

**Credits: 1**

**Course Title:** Algebra Basics

**Course Description (as it should appear in the catalog)**

Includes basic operations with algebraic expressions and solving simple algebraic equations using signed numbers with emphasis on applications. Credits not applicable toward graduation.

Prerequisite: placement recommendation or MTE 2. Lecture 4 hours per week for  $\frac{1}{4}$  semester.

**General Course Purpose**

This course is designed to introduce the student to integers, variables, algebraic expressions, equations and their applications.

**Course Objectives** (Each item should complete the following sentence.)

Upon completing the course, the student will be able to:

1. Determine the absolute value of a number.
2. Express repeated factors using exponents.
3. Evaluate powers of numbers.
4. Add, subtract, multiply, and divide signed numbers.
5. Use the proper order of operations to simplify expression containing multiple operations on signed numbers, including powers and square roots.
6. Convert between integer powers of 10 and equivalent decimal numbers.
7. Convert numbers between scientific notation and standard notation.
8. Identify the properties of real numbers (Commutative, Associative, Distributive, Identity, and Inverse Properties).
9. Simplify an algebraic expression by combining like terms.
10. Simplify algebraic expressions using the order of operations.
11. Evaluate a formula or algebraic expression for given values of the variables.
12. Solve one-step equations using rational numbers.
13. Solve one-step equations using percents.
14. Solve problems using proportions.
15. Solve application problems including finding perimeter, area, and volume.

**Major Topics to be Included**

1. Absolute Value
2. Square Root Introduction
3. Signed Numbers
4. Scientific Notation
5. Algebraic Expressions
6. Linear Equation Solutions
7. Proportion Problems
8. Perimeter, Area, and Volume

**Effective Date of Course Content Summary (Month, Date Year):** January 2, 2012