J. Sargeant Reynolds Community College
Course Content Summary

Course Prefix and Number: MTE 3
Credits: 1

Course Title: Algebra Basics

Course Description: 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 ¼ semester.

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

Course Prerequisites and Co-requisites:
Prerequisite: Placement recommendation or MTE 2

Student Learning Outcomes:
Upon completing the course, the student will be able to:

a. Determine the absolute value of a number;
b. Express repeated factors using exponents;
c. Evaluate powers of numbers;
d. Add, subtract, multiply, and divide signed numbers;
e. Use the proper order of operations to simplify expressions containing multiple operations on signed numbers, including powers and square roots;
f. Convert between integer powers of 10 and equivalent decimal numbers;
g. Convert numbers between scientific notation and standard notation;
h. Identify the properties of real numbers (Commutative, Associative, Distributive, Identity, and Inverse Properties);
i. Simplify an algebraic expression by combining like terms;
j. Simplify algebraic expressions using the order of operations;
k. Evaluate a formula or algebraic expression for given values of the variables;
l. Solve one-step equations using rational numbers;
m. Solve one-step equations using percents;
n. Solve problems using proportions; and
o. Solve application problems including finding perimeter, area, and volume.

Major Topics to Be Included:

a. Absolute value
b. Square root introduction
c. Signed numbers
d. Scientific notation
e. Algebraic expressions
f. Linear equation solutions
g. Proportion problems
h. Perimeter, area, and volume

Date Created/Updated (Month, Day, and Year): January 2, 2012