

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

Course Prefix and Number: MTH 3

Credits: 5

Course Title: Algebra I

Course Description (including lecture hours, lab hours, total contacts)

Covers the topics of Algebra I, including real numbers, equations and inequalities, exponents, polynomials, Cartesian coordinate system, rational expressions, and applications. Develops the mathematical proficiency necessary for selected curriculum entrance. Credits not applicable toward graduation. Prerequisites: a placement recommendation for MTH 3 and Arithmetic or equivalent. Lecture 5 hours per week.

General Course Purpose

This course prepares the student for Algebra II and eventually college-level mathematics courses. Upon completion of the course, students should register for MTH 4.

Course Prerequisites/Corequisites (*Entry-level competencies **required** for enrollment*)

The course requires a placement recommendation for MTH 3 and Arithmetic or equivalent.

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

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

- a. Perform arithmetic operations of real numbers.
- b. Solve and graph solutions of linear equations and inequalities in one variable.
- c. Solve word problems using geometric and/or algebraic approaches.
- d. Use mathematical models and formulas.
- e. Solve and graph solutions of systems of linear equations and inequalities in two variables.
- f. Use properties of exponents and add, subtract, multiply, and divide polynomials.
- g. Factor polynomials.
- h. Solve quadratic equations by factoring.
- i. Define and simplify rational expressions.

Major Topics to be Included

- a. real numbers
- b. linear equations and inequalities in one variable
- c. problem solving
- d. mathematical models and formulas
- e. Cartesian coordinate system
- f. linear equations and inequalities in two variables
- g. systems of linear equations and inequalities
- h. exponents and polynomials
- i. factoring
- j. quadratic equations
- k. rational expressions

Effective Date of Course Content Summary (Month, Date Year): August 16, 2006