

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

Course Prefix and Number: MTH 4

Credits: 5

Course Title: Algebra II

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

Expands upon the topics of Algebra I, including rational expressions, radicals and exponents, quadratic equations, systems of equations, and applications. Covers essential topics in geometry for transfer level mathematics courses. Develops the mathematical proficiency necessary for selected curriculum entrance. Credits not applicable toward graduation. Prerequisites: a placement recommendation for MTH 4 and Algebra I or equivalent. Lecture 5 hours per week.

General Course Purpose

MTH 4 develops the mathematical proficiency necessary for selected curriculum entrance.

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

MTH 4 requires a placement recommendation for MTH 4 and Algebra I or equivalent.

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

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

- a. Demonstrate an understanding of given angles, lines, and special triangles, and use appropriate geometric formulas.
- b. Identify functions, factor polynomials, solve polynomial equations, and sketch the graph of equations and functions using the graphing calculator.
- c. Find the domain of rational functions, simplify rational expressions, and solve rational equations.
- d. Simplify radical expressions and solve radical equations.
- e. Solve quadratic and nonlinear systems of equations and sketch the graph of quadratic functions and circles.

Major Topics to be Included

- a. Review of Angles, Lines, Special Triangles, and Geometric Formulas
- b. Graphs and Functions
- c. Polynomials and Polynomial Functions
- d. Rational Expressions, Rational Equations, and Rational Functions
- e. Radical Expressions, Radical Equations, and Radical Functions
- f. Quadratic Equations, Functions and Inequalities
- g. Nonlinear Systems of Equations

Effective Date of Course Content Summary (Month, Date Year): Fall 2007