

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

**Course Prefix and Number:** MTH 115

**Credits:** 3

**Course Title:** Technical Mathematics I

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

Presents algebra through exponential and logarithmic functions, trigonometry, vectors, analytic geometry, and complex numbers. Prerequisites: a placement recommendation for MTH 115 and Algebra I, Geometry, and Algebra II, or equivalent. Lecture 3 hours per week.

**General Course Purpose**

MTH 115 is designed for technical mathematics students and not designed for transfer.

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

The prerequisites for this course include Algebra I, Algebra II, and Geometry, or equivalent. A placement recommendation for MTH 115 is also required.

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

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

- a. Recognize a function, identify its properties, and sketch its graph.
- b. Evaluate trigonometric functions and solve right triangles.
- c. Solve systems of linear equations.
- d. Factor polynomials; perform operations with algebraic fractions, and solving equations involving algebraic fractions.
- e. Solve quadratic equations.
- f. Perform operations involving fractional exponents and radical expressions.
- g. Define, graph, and apply exponential and logarithmic functions.

**Major Topics to be Included**

- a. Basic Algebraic Operations (A review)
- b. Functions and Graphs
- c. The Trigonometric Functions
- d. Systems of Linear Equations; Determinants
- e. Factoring and Fractions
- f. Quadratic Equations
- g. Exponents and Radicals
- h. Exponential and Logarithmic Functions

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