

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

Course Prefix and Number: MTH 116

Credits: 3

Course Title: Technical Mathematics II

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

Presents algebra through exponential and logarithmic functions, trigonometry, vectors, analytic geometry, and complex numbers. Lecture 3 hours per week.

General Course Purpose

MTH 116 is designed for technical mathematics students and is not designed for transfer.

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

The course requires successful completion of MTH 115 or equivalent.

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

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

- a. Determine the sign of given trigonometric functions.
- b. Evaluate trigonometric functions of angles whose measure exceeds 90° , and utilize radian measure.
- c. Perform operations on vectors; apply Law of Sines and Law of Cosines.
- d. Graph trigonometric functions.
- e. Utilize basic trigonometric identities.
- f. Perform operations on complex numbers.
- g. Solve equations involving polynomials of degree greater than two.
- h. Solve systems of nonlinear equations.
- i. Calculate determinants and perform operations on matrices.
- j. Solve linear inequalities.
- k. Use a graphing utility extensively in MTH 116.

Major Topics to be Included

- a. Trigonometric Functions of any Angle
- b. Vectors and Oblique Triangles
- c. Graphs of the Trigonometric Functions
- d. Additional Topics in Trigonometry
- e. Complex Numbers
- f. Systems of Nonlinear Equations
- g. Polynomial Equations of Higher Degree
- h. Determinants and Matrices
- i. Inequalities

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