

**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. Part II of II. Prerequisite: MTH 115 or equivalent. 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