

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

Course Prefix and Number: MTH 161 Credits: 3

Course Title: PreCalculus I

Course Description

Presents topics in power, polynomial, rational, exponential, and logarithmic functions, and systems of equations. Credit will not be awarded for both MTH 161 and 167 or equivalent. This is a Passport and UCGS transfer course. Prerequisite: Completion of MDE 60 followed by co-enrollment in MDE 61 with MTH 161 or placement in MTH 161 or placement in co-requisites MTH 161 and MDE 61. Lecture 3 hours. Total 3 hours per week. 3 credits

General Course Purpose

The general purpose of this one-semester course is to prepare students for a course in statistics or applied calculus sequence by providing them with the necessary competencies in algebra and functions. Precalculus I can also be applied in conjunction with Precalculus II in preparation for a course in calculus with analytic geometry.

Course Prerequisites/Corequisites

Interpret the algebraic and graphical meaning of equality of functions ($f(x) = g(x)$) and inequality of functions ($f(x) > g(x)$)

Exponential and Logarithmic Functions

Identify and graph exponential and logarithmic functions and their transformations.

Use properties of logarithms to simplify and expand logarithmic expressions.

Convert between exponential and logarithmic forms and demonstrate an understanding of the relationship between the two forms.

Solve exponential and logarithmic equations using one-to-one and inverse properties.

Solve application problems involving exponential and logarithmic functions.

Systems of Equations and Inequalities

Solve three variable linear systems of equations using the Gaussian elimination method.

Major Topics to be Included

- x Relations and Functions
- x Polynomial and Rational Functions
- x Exponential and Logarithmic Functions
- x Systems of Equations and Inequalities

Effective Date/Updated: August 1, 2022