

**Tennessee Technological University
Mathematics Department**

MATH 1710: Precalculus Algebra

I. COURSE DESCRIPTION FROM CATALOG:

Review of algebra; relations and functions and their graphs, including polynomial, rational, exponential, and logarithmic functions; inequalities. Lec. 3. Cr. 3.

II. PREREQUISITE(S):

A minimum ACT Math sub-score of 19, OR completion of Learning Competencies 1 through 5, or a minimum grade of C in MATH 1000.

III. COURSE OBJECTIVES(S):

Refine the algebraic, geometric, and reading comprehension skills necessary in the study of calculus.

The goal of the general education mathematics requirement is to enhance students' abilities to utilize mathematics. Students will demonstrate

1. the ability to use mathematics to solve problems.
2. the ability to create or analyze graphs (or other mathematical representations of data/relationships).
3. proficiency in mathematical computations/algorithms.
4. understanding of mathematical concepts.

IV. STUDENT LEARNING OUTCOMES:

Upon successful completion of this course the student will manipulate both numeric and algebraic expressions; solve various types of algebraic equations and inequalities; distinguish between relations and functions and create graphs by hand of a variety of functions; compute the solution to a system of equations both graphically and algebraically, and interpret the corresponding result. This course is intended as a prerequisite for MATH 1910.

V. TOPICS TO BE COVERED:

(Order may vary depending upon appropriate progression of topics at the instructor's discretion)

Expressions

- Exponents and Radicals
- Polynomial Expressions
- Rational Expressions

Equations

- Equations
 - Linear
 - Quadratic
 - Polynomial
 - Rational

- Absolute value
- Radical
- Exponential
- Logarithmic
- Inequalities
- Relations and Graphing
 - Rectangular coordinate system and relations
 - Circles
 - Quadratics (y^2)
 - Equations of lines
 - Graphing linear inequalities
- System of Equations

Functions

- Polynomial Functions
- Rational Functions
- Inverse Functions
- Exponential functions
- Logarithmic functions
 - Logarithm properties
- Piecewise Functions
 - Absolute Value Functions

VI. ADDITIONAL INFORMATION:

VII. POSSIBLE TEXTS AND REFERENCES:

Precalculus: Concepts Through Functions: A Unit Circle Approach, 4th edition Sullivan and Sullivan

VIII. ANY TECHNOLOGY THAT MAY BE USED:

My Lab Math

IX. STUDENT ACADEMIC MISCONDUCT POLICY:

Maintaining high standards of academic integrity in every class at Tennessee Tech is critical to the reputation of Tennessee Tech, its students, alumni, and the employers of Tennessee Tech graduates. The Student Academic Misconduct Policy describes the definitions of academic misconduct and policies and procedures for addressing Academic Misconduct at Tennessee Tech. For details, view the Tennessee Tech's Policy 217 – Student Academic Misconduct at [Policy Central](#).

X. DISABILITY ACCOMMODATION:

Students with a disability requiring accommodations should contact the Accessible Education Center (AEC). An Accommodation Request (AR) should be completed as soon as possible, preferably by the end of the first week of the course. The AEC is located in the Roaden University Center, Room 112; phone 931-372-6119. For details, view the Tennessee Tech's Policy 340 – [Services for Students with Disabilities at Policy Central](#).