

**Syllabus**  
**Math 01.122 Pre-Calculus Mathematics**

**CATALOG DESCRIPTION:**

Math 01.122 Pre-Calculus Mathematics 4 s.h.

This course helps prepare students for Calculus I . The contents include: exponential, logarithmic and trigonometric functions (including their inverses and related functions). Graphs of functions also are studied. A graphing calculator is required. Students are expected to have completed an equivalent of Basic Algebra II.

**OBJECTIVES:**

At the conclusion of the course the students will be able to:

1. Manipulate and evaluate algebraic, exponential, logarithmic and trigonometric functions.
2. Graph linear and quadratic functions, including those describing the conic sections, in both rectangular and polar coordinates.
3. Graph algebraic, exponential, logarithmic and trigonometric function.

**DELIVERY, EVALUATION AND GRADING PROCEDURES:**

Standard lectures, demonstrations (especially with a graphing calculator), and examination.

**TEXT:**

PRECALCULUS: Contemporary Precalculus: A graphing Approach w/CD & Info Trac, Harcourt, 5th Edition, 2009

Chapters 1 & 2 (1.5 weeks) Functions and Their Graphs

Topics include linear and quadratic functions, graphs, composite functions, inverse functions, and parametric equations.

Chapter 3: (2 weeks) Polynomial Functions

Graphs of polynomial functions, real zeros, rational zeros and complex zeros of polynomials.

Chapter 4: (2 weeks) Rational Functions and Functions Involving Radicals

Asymptotes and graphs of rational functions, equations and inequalities with rational functions.

#### Chapter 5: (1.5 weeks) Exponential and Logarithmic Functions

Topics include exponential and logarithmic functions, compound interest, and growth and decay.

#### Chapter 6: (2.5 weeks) Trigonometric Functions

Angle measurement, basic definitions of trig functions, and computing values of trig functions, graphs of the 6 trig functions.

#### Chapter 7: (2.5 weeks) Analytic Trigonometry

Inverse trig functions, trig identities, sum and difference formulas, double and half angle formulas, and trig equations are covered.

#### Chapter 8: (1 week) More Applications of Trigonometry

The Law of Sines and Cosines, areas of triangle, DeMoivre's Theorem.

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