

ROWAN UNIVERSITY
Department of Mathematics

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: algebraic, exponential, logarithmic, trigonometric, and inverse trigonometric functions. The graphs of those functions are also 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.

CONTENT:

1. Functions and Their Graphs

- Linear and quadratic functions, and their graphs
- Composite functions
- Inverse functions
- Parametric equations

2. Polynomial Functions

- Graphs of polynomial functions
- Real zeros
- Rational zeros
- Complex zeros of polynomials

3. Rational Functions and Functions Involving Radicals

- Asymptotes
- Graphs of rational functions
- Equations and inequalities with rational functions

4. Exponential and Logarithmic Functions

- Exponential and logarithmic functions
- Compound interest
- Growth and decay

5. Trigonometric Functions

- Angle measurement
- Basic definitions of trig functions
- Computing values of trig functions
- Graphs of the 6 trig functions

6. Analytic Trigonometry

- Inverse trig functions
- Trig identities
- Sum and difference formulas
- Double and half angle formulas
- Trig equations are covered

7. More Applications of Trigonometry

- The Law of Sines and Cosines
- Areas of triangle
- DeMoivre's Theorem

EVALUATION AND GRADING PROCEDURES:

Demonstrations (especially with a graphing calculator), and examination

TEXT:

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

rev. 07/29/08 km

Edited: 04/2021