Rowan University
Department of Mathematics

Syllabus
Math 01.123 College Algebra

Catalog Description:

Math 01.123 College Algebra 3 S.H.

Prerequisites: Basic Algebra II

This course is designed to help students who are weak in algebra prepare for Statistics I or Calculus Techniques & Applications. The contents include: a brief review of intermediate algebra, the structure of the real number system, elementary analytic geometry, and algebraic, exponential and logarithmic functions (including their inverses and related functions). Graphs of functions are also studied. A graphing calculator is required. Intermediate algebra or its equivalent.

A) **Objectives:**

At the end of this course, students will demonstrate the ability to:

(i) perform different operations involving algebraic expressions including
exponential expressions,

(ii) graph linear and quadratic functions,

(iii) solve equations and inequalities algebraically and graphically,

(iv) graph polynomial, rational, algebraic, exponential and logarithmic functions,

(v) solve exponential and logarithmic equations, and apply exponential and logarithmic models.

B) **Topical Outline:**

Contents:

Chapter 1: Introduction:

Real numbers, absolute value, exponents and radicals, laws of exponents, polynomials and factoring, elementary analytic geometry.

Chapter 2: Functions and their graphs:

Functions, graphs of functions, combinations of functions, inverses of functions, graphs of linear andquadratic functions.

Chapter 3: Solving equations and inequalities:

Intercepts and zeros of functions, solving equations algebraically and graphically, solving inequalities, algebraically and graphically.

Chapter 4: Polynomials and rational functions:

Polynomial functions of higher degree, rational functions and asymptotes, graphs of polynomial and rational functions.

Chapter 5: Exponential and logarithmic functions:

Exponential functions and their graphs, logarithmic functions and their graphs, properties of logarithms, solving exponential and logarithmic equations, exponential and logarithmic models.

C) **Student Evaluation:**

Students may be evaluated based on class participation, assignments and tests.

D) **Course Texts**

The following books may be used as a text for the course.

*Hungerford, **Contemporary College Algebra:** A graphing Approach with Student Solutions Manual: Brooks/Cole, 2nd Ed, 2005.

* Schaufele, Zumoff, Sims & Sims, **Earth Algebra: College Algebra with Appl. to Environmental Issues** : Addison-Wesley

Larson, Hostetler and Edwards (1997), Precalculus, Houghton Mifflin Company.

Hackworth, Robert, et. al., (1994), Focus on College Algebra, second edition, H&H Publishing Company.