Catalog Description:
This is the first course of a two course sequence covering precalculus. In this first course, topics covered will include an introduction to functions (linear, polynomial and rational), equations and inequalities along with appropriate review. This course is designed with an emphasis on reviewing these fundamental basic algebra skills as they apply to precalculus in a just-in-time manner.

Prerequisite:
A grade of C- or above in 1075; or grade of B- or above in 1050; or Math Placement level R. Not open to students with credit for 1121 or above.

Exclusions:
Not open to students with credit for 1121 or above.

Follow-up Courses:
Math 1121

Text:
Precalculus with Review 1 in Ximera.

Topics List:

1 Variables and CoVariation
- 1.1 Quantitative Reasoning: Units, Estimates, Percents
- 1.2 Relations and Graphs: Cartesian Coordinates, Relations, Famous Functions
- 1.3 Changing in Tandem

Midterm 1

2 Comparing Lines and Exponentials
- 2.1 Linear Equations: Patterns, Slope, Equations of Lines
- 2.2 Linear Modeling
- 2.3 Exponential Modeling: Exponent Rules, Early Exponentials

Midterm 2

3 Functions
- 3.1 What is a Function?
- 3.2 Function Properties, Inverse Functions, Famous Function Properties

- 3.3 Average Rate of Change of Functions
- 3.4 Exponential Functions Revisited
  - 3.4.1 Exponential Functions
  - 3.4.2 Modeling with Exponential Functions Revisited
  - 3.4.3 The Special Number e

Midterm 3

- 4 Building New Functions from Famous Functions
  - 4.1 Building New Functions
    - 4.1.1 Algebra of Functions
    - 4.1.2 Creating a New Function: Tangent
  - 4.2 Polynomials
    - 4.2.1 Parabolas
    - 4.2.2 Definition of Polynomials
  - 4.3 Rational Functions
    - 4.3.1 The Famous Function f(x) = 1/x
    - 4.3.2 Polynomial Long Division
    - 4.3.3 The Definition of a Rational Function

Midterm 4

- 5 Domain and Range
  - 5.1 Domain
  - 5.2 Range, Famous Functions Updated
  - 5.3 Composition of Functions, Domains and Ranges

Midterm 5

- 6 Zeros
  - 6.1 What are the Zeros of Functions?
  - 6.2 Zeros of Polynomials
  - 6.3 Zeros of Famous Functions
    - 6.3.1 Zeros of Rational Functions
    - 6.3.2 Zeros of Functions with Radicals
    - 6.3.3 Zeros of Exponential Functions

Midterm 6

- 7 Manipulating Functions
  - 7.1 Function Transformations
    - 7.1.1 Vertical and Horizontal Shifts
    - 7.1.2 Stretching Functions
    - 7.1.3 Reflections of Functions

Final