MATH 004
Introduction to College Mathematics for Business and the Social Sciences

Course Description
Covers functions and their graphs, including linear and polynomial functions, zeros, and inverse functions, as well as exponential and logarithmic functions and their inverses. Also includes counting and elementary probability. Involves applications to business and social sciences.

Prerequisites
MATH 003 or MATH 004L, may be taken concurrently; the Mathematics Department determines the study program pathway based upon the score on the Mathematics Advisory Examination; or a score of 2 on the AP Calculus AB Exam.

Textbook
College Algebra (11th edition) by Ron Larson

Suggested Lecture Schedule (50-minute lectures)

Lectures	Textbook Section(s)	Topic(s)
1	P.1	Real Numbers and Their Properties
1	P.2	Exponents and Radicals
1	P.3	Polynomials and Special Products
1	P.4	Factoring Polynomials
1	P.5	Rational Expressions
1	P.6, 1.1	The Rectangular Coordinate System, Graphs of Equations
1	1.2	Linear Equations in One Variable
1	1.3, 1.5	Modeling with Linear Equations, Complex Numbers (briefly)
1	1.4	Quadratic Equations and Applications
1	1.6	Other Types of Equations
1	1.7	Linear Inequalities in One Variable
1	1.8	Other Types of Inequalities
1	2.1	Linear Equations in Two Variables
1	2.2	Functions
1	2.3	Analyzing Graphs of Functions
1	2.4, 2.5	A Library of Parent Functions, Transformations of Functions
1	2.6, 2.7	Combinations of Functions (Composite Functions), Inverse Functions
1	3.1	Quadratic Functions and Models
1	3.2	Polynomial Functions of Higher Degree
1	3.3	Polynomial and Synthetic Division
1	3.4	Zeros of Polynomial Functions
1	4.1	Rational Functions and Asymptotes
1	4.2	Graphs of Rational Functions
1	5.1	Exponential Functions and Their Graphs
1	5.2	Logarithmic Functions and Their Graphs
1	5.3	Properties of Logarithms

1	5.4	Exponential and Logarithmic Equations
1	5.5	Exponential and Logarithmic Models (e.g. compound interest)
1	6.1	Linear and Nonlinear Systems of Equations
1	6.2	Two-Variable Linear Systems
1	6.4	Partial Fractions
1	6.5	Systems of Inequalities
1	6.6	Linear Programming (optional)
1	8.1, 8.2	Sequences and Series, Arithmetic Sequences and Partial Sums
2	8.3, 8.6	Geometric Sequences and Series, Counting Principles

Total number of scheduled 50-minute lectures: 36

50-minute classes meet three times a week for 10 weeks (minus holidays), so there are at most 30 50-minute class sessions in one quarter. Thus, some of the 36 lectures above will be given in discussion with a TA.