MATH 006A
Precalculus: An Introduction to Functions 1

Course Description
Develop and refine quantitative reasoning, covariational reasoning, problem solving, and algebraic proficiency in preparation for calculus. Topics include functions, properties of functions, ways to create new functions, and modeling real-world situations with functions. Specific functions covered include linear, exponential, and logarithmic functions.

Prerequisites
MATH 003 or MATH 06LA, may be taken concurrently; the Mathematics Department determines the study program pathway based upon the score on the Mathematics Advisory Examination; or consent of instructor.

Textbook
Precalculus: Pathways to Calculus: A Problem Solving Approach (8th edition) by Carlson, Oehrtman, & Moore

Suggested Lecture Schedule (50-minute lectures)

Lecture #	Textbook Section(s)	Topic(s)
1	1.1	Representational Equivalence
2	1.3, 2.1	Quantities: Modeling in word problems
3	2.1, 2.7	Quantities: Bounding with absolute value (in)equalities
4	2.1	Quantities: Co-variation and the Rule of Four
5	2.2	Changes in Quantities and Constant Rate of Change
6	2.3	Constant Rate of Change and Linear Functions
7	2.4	Constant Rate of Change and Linearity
8	2+	Solving Systems of Linear Equations (not in book)
9	Module 2, 3.1	M2 Review, Box Problem
10	3.1, 3.2	Box Problem and Modeling Function Relationships
11	3.2	Function Relations and Domain of Functions
12		Midterm (if not proctored, move schedule up and extend logarithm discussion)
13	3.3	Using and Interpreting Function Notation
14	3.4	Function Composition in context
15	3.5	Function Composition (Practice)
16	3.6	Inverse Functions
17	3+	Transformation: Stretch, shift, flip (not in book)
18	Module 3, 4.0	M3 Review, Exponents – Skills and Procedures
19	4.1	The Meaning of Exponents
20	4.2, 2.5	Comparing linear and exponential functions, Speed
21	4.3	1-unit Growth & Decay Factors
22	4.6	Compounding Periods & Compound Interest Formula
23	Module 4	Review: Exponential functions

24	4+	Graphs of exponential functions and their inverses, Motivate e (not in book)
25	4.8	The Inverse of an Exponential Function
26	Module 4	Review: Exponentials, Logarithms, and relating them
27	4.9	Solving Logarithmic Equations
28	4.9	Solving Logarithmic Equations
29	Modules 1 - 4	Review
30		Review (note: at least one day of class is missed most quarters for a holiday)