MATH 006B
Precalculus: An Introduction to Functions 2

Course Description
Develop and refine quantitative and covariational reasoning skills and problem solving skills in preparation for calculus. Topics include functions, properties of functions, modeling real-world situations with functions, limits, and continuity. Specific functions covered include polynomial, rational, trigonometric, and inverse trigonometric functions.

Prerequisites
MATH 006A with a grade of B- or better or MATH 006A with a grade of C- or better; MATH 06LB, may be taken concurrently; NOTE: MATH 006A with a grade of C-, C, or C+ requires concurrent enrollment in MATH 06LB; 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	5.1	Modeling Relationships in a Context
2	5.2	Concavity & Average Rate of Change
3	5.3, 5.4	Transformations of Polynomial Functions and Quadratic Functions
4	5.4, 5 ext 2	Vertex Form of a Quadratic Function (may skip completing the square)
5	5.5	Quadratic Functions, Roots and End Behavior of Polynomial Functions
6	5.5, 5 ext 3	Multiplicity of Roots
7	Module 5, 6.1	Review Module 5, Vertical Asymptotes of Rational Functions
8	6.2	End Behavior of Rational Functions
9	6.3	Graphing Rational Functions and Understanding Limits
10	6+	Limits and Continuity (not in book)
11	Module 6	Review of rational functions, limits, and continuity
12		Midterm (if not proctored, move schedule up and extend Module 8 discussion)
13	7.1, 7.2	Angle Measures and Angle Measure in Context
14	7.3	Representing Circular Motion
15	7.4	Using the Sine and Cosine Functions to Track Circular Motion
16	7.5	Using the Sine and Cosine Functions in Applied Settings
17	7.6	Transformations of the Sine Function
18	7.7	Period, Amplitude, and Shifts of Periodic Functions
19	7.8	The Tangent Function

20	7.9, Module 7	Periodicity, negative angles, symmetry of circle, Review Module 7
21	7.10	Inverse Trigonometric Functions
22	Module 7	Review Module 7
23	8.1	Right Triangle Trigonometry and Connections with Unit Circle Trigonometry
24	8.2	Right Triangle Trigonometry Applications
25	8.3	Trigonometric Identities
26	Module 8	Review module, Introduce non-right triangles
27	8.5	Law of Sines
28	8.6	Law of Cosines
29	Modules 5 - 8	Review
30		Review (note: at least one day of class is missed most quarters for a holiday)