

## Trigonometry with Precalculus

### COURSE DESCRIPTION

Trigonometry with Precalculus is an extremely rigorous college preparatory class. A grade of C or better in Algebra 2 is required as a prerequisite for enrollment. A grade of C or better in Trigonometry with Precalculus satisfies one year of the UC and Cal State mathematics requirements for entry. Students will spend the first semester exclusively on trigonometry, and spend the second semester doing math analysis.

### ESSENTIAL KNOWLEDGE STANDARDS

**Upon successful completion of this class, students will:**

- Understand and apply the language and notation of algebraic vectors
- Understand and apply the law of sines and Law of cosines
- Evaluate trigonometric expressions involving the six trigonometric functions and their inverses in both degrees and radians with and without the use of a calculator (using the unit circle)
- Apply trigonometric concepts to real-world problems (area of sectors, arc length, and angular velocity)
- Graph the six trigonometric functions and their inverses
- Evaluate principle values of trigonometric functions and their inverses
- Understand, apply, prove and simplify trigonometric identities
- Solve trigonometric equations
- Understand and apply the translation of relations and functions and their inverses in the coordinate plane
- Understand and determine the asymptotes of rational functions
- Solve polynomial functions with rational roots of nth degree
- Understand and apply exponential functions and logarithms to real-world problems
- Understand and apply the properties of arithmetic and geometric sequences and series

### TEXT:

Larson, Hostetler, *Precalculus with Limits*,  
Houghton Mifflin, Boston, 2007.

### REQUIRED DAILY MATERIALS

- Pencil and eraser
- Notebook (journal)
- Textbook
- Graph paper
- Colored pencils
- Scientific calculator (preferably TI-84 plus)