Honors Pre-Calculus & Trigonometry
Curriculum Map

Units	Highlights
Unit 1: Sequences	• General sequences • Summation notation (Sigma) • Arithmetic: rule, particular term, sum • Geometric: rule, particular term, sum • A function with a specific domain: notation differences
Unit 2: Trigonometry (Right Triangles)	• Right triangles: six trig ratios: finding missing sides. • Pythagorean Theorem • Applications: angle of elevation, angle of depression
Unit 3: Trigonometry (Oblique Triangles)	• Law of Sines (ASA, AAS) • The Ambiguous Case (SSA) • Law of Cosines (SSS, SAS) • Applications: Bearing Problems
Unit 4: Trigonometry (Angles and Measure)	• Angles: degrees and radians (conversions) • Co-terminal angles • Standard position: pay attention to terminal side quadrant. • Evaluating trig functions with calculator (degrees, radians)
Unit 5: Trigonometry (Evaluate without Calculator)	• Reference angles • Special triangles • Quadrantals: Unit Circle • Degrees and radians • Terminal side and quadrants
Unit 6: Trigonometry (Analytical)	• Solve Trigonometric Equations (Graphing Calculator) • Simplifying trigonometric expressions • Verifying identities • Solving Trigonometric Equations (Without Graphing)
Semester 2	**Highlights**
Unit 7: Functions and their Graphs (Use of graphing calculator)	• Interval Notation • Using features on graphing calculator: find intervals increasing, decreasing, or constant, relative extrema, polynomials, piece-wise functions, domain, range, intercepts --- all from the graph
Unit 8: Functions	• From the equation --- domain, zeros, difference quotient, even or odd function • Knowing the 6 basic functions --- perform shifts, reflections, stretches, and shrinks --- translate the whole graph or a point on a graph – no graphing calculators on the summative assessment
Unit 9: Polynomial and Rational Functions	• Polynomials --- Leading Coefficient Test, Multiplicity of Zeros • Rational --- horizontal and vertical asymptotes, domains, even or odd functions and symmetry • No graphing calculator on the summative assessment

Unit 10: Synthetic Division and its Applications	• Synthetic division • Remainder Theorem • Factoring polynomials of degree three or higher
Unit 11: Limits	• Evaluating limits – numerically, graphically, and analytically • One-sided limits • Continuity versus differentiability • Continuity definition • Vertical asymptotes and limits
Unit 12: Differentiation	• Derivative --- Using the limit process. • Differentiation rules: Power, Constant Multiple, Constant, Product, Quotient, and Chain rules • Source of derivative: table, graph, equation
Unit 13: Applications of Differentiation	• Absolute Extrema on a closed interval • Increasing and decreasing functions • First Derivative Test

The last three units will be the first 3 units in AP Calculus AB with some concept additions.
Portions of some assessments will be no calculator.

What distinguishes this class from regular Pre-Calculus & Trigonometry?

- Assessments --- need to have all formulas memorized.
- Problems ---- more special cases, more challenging
- Pacing --- quicker
- Units may be broken down into several summative assessments in the regular class.
    - For example: Unit 5 will be separated into degrees for one assessment and radians for the second assessment in the regular course. The honors course will have them in the same assessment.
- The regular class will not do units 12 and 13