Pre-Calculus Scope & Sequence

Grading Period	Unit Title	Learning Targets
Throughout the School Year	*Apply mathematics to problems in everyday life *Use a problem-solving model that incorporates analyzing information, formulating a plan, determining a solution, justifying the solution and evaluating the reasonableness of the solution *Select tools to solve problems *Communicate mathematical ideas, reasoning and their implications using multiple representations *Create and use representations to organize, record and communicate mathematical ideas *Analyze mathematical relationships to connect and communicate mathematical ideas *Display, explain and justify mathematical ideas and arguments	
First Grading Period	Introduction to Trigonometry	• Angles, Degrees Radians • Linear and Angular Velocity • Reference Triangles and the Unit Circle
	Trigonometric Graphs	• Trigonometric Functions • Inverse Trigonometric Functions • Harmonic Motion
	Trigonometric Identities	• Trigonometric Identities and Proofs • Solving Trigonometric Equations
Second Grading Period	Triangle Applications	• Right Triangle Trigonometry • Law of Sines, Law of Cosines, Area of Triangles
	Polar Graphs and Equations	• Polar Coordinates • Polar Equations • Polar Graphs • Complex Polar Coordinates
	Vectors	• Vector Operations • Vector Applications

Third Grading Period	Conic Sections Parametric Equations	• Equations and Properties of Conics • Conics in Polar Form • Graph Parametric Equations • Convert to Rectangular Form and Back • Applications
	Introduction to Functions	• Parent and Piecewise Functions • Transformation of Functions • Symmetry and Even/Odd functions • Composition of Functions • Inverse Functions
	Polynomial and Rational Functions	• Polynomial Functions (Graphing, finding zeros, maximum, minimum) and Equations • Rational Functions (Graphing) and Equations • Solving Inequalities and Answer in Interval Notation • Real and Complex zeros
	Exponential and Logarithmic Functions	• Exponential and Logarithmic relationships • Properties of Logarithms and Exponents • Solving Exponential and Logarithmic Equations
Fourth Grading Period	Systems of Equations	• Linear Systems of Equations • Non-Linear Systems of Equations • Partial Fraction Decomposition
	Sequences and Series	• Arithmetic Sequences • Geometric Sequences • Partial Sum of Arithmetic and Geometric Series • Infinite Geometric Series • Binomial Theorem
	Introduction to Calculus	• Limits Graphically and Algebraically • Continuity • Definition of Derivative • Applications of Derivatives