Pre-Calculus Curriculum Map

TOPIC & TEXTBOOK CHAPTERS	Duration	Month(s)
Unit 1: Graphs & Function Review Chapters 1 & 2: Rectangular Coordinates, Intercepts, Symmetry, Solving Equations, Lines, Circles, Functions, Graphs, Function Library, Transformations	3 wks	Aug/Sept
Unit 2: Linear & Quadratic Functions Chapter 3: Linear Functions, Linear Models, Quadratic Functions, Quadratic Models, Inequalities from Quadratic Functions	2 wks	Sep
Unit 3: Polynomial and Rational Functions Chapter 4: Polynomial Functions and Models, Rational Functions & Graphs, Polynomial and Rational Inequalities, Real Zeros, Complex Zeros, Fundamental Theorem of Algebra	3 wks	Sep/Oct
Unit 4: Exponential and Logarithmic Functions Chapter 5: Composite Functions, One-to-One Functions, Inverse Functions, Exponential Functions, Logarithmic Functions, Properties of Logarithms, Logarithmic & Exponential Equations, Financial Models, Exponential Growth/Decay Models, Logistic Growth/Decay Models	5 wks	Oct/Nov
Unit 5: Systems of Equations and Inequalities Chapters 11 & 12: Systems of Linear Equations, Substitution & Elimination, Matrices, Determinants, Matrix Algebra, Partial Fraction Decomposition, Systems of Inequalities, Linear Programming, Geometric & Arithmetic Sequences & Series, Mathematical Induction, Binomial Theorem	4 wks	Nov/Dec
Unit 6: Trigonometric Functions Chapter 6: Angles, Trigonometric Functions, Unit Circle, Trigonometric Function Properties, Trigonometric Function (Sine, Cosine, Tangent, Cosecant, Secant and Cotangent) Graphs, Phase Shift, Sinusoidal Curve Fitting	5 wks	Jan
Unit 7: Analytic Trigonometry Chapter 7: Inverse Trigonometric Functions, Trigonometric Identities, Sum/Difference Formulas, Double-Angle & Half-Angle Formulas, Product-to-Sum & Sum-to-Product Formulas, Trigonometric Equations	4 wks	Feb
Unit 8: Applications of Trigonometric Functions Chapter 8: Applications of Right Triangle Trigonometry, Law of Sines, Law of Cosines, Area of a Triangle, Simple Harmonic Motion, Damped Motion, Combing Waves	2 wks	Mar
Unit 9: Polar Coordinates & Vectors Chapter 9: Polar Coordinates, Polar Equations & Graphs, The Complex Plane, De Moivre's Theorem, Vectors, The Dot Product, Vectors in Space, The Cross Product	3 wks	Mar/Apr
Unit 10: Analytic Geometry Chapter 10: Conics, Parabolas, Ellipses, Hyperbolas, Rotation of Axes, General Form of a Conic, Polar Equations of Conics, Plane Curves & Parametric Eqns, Systems of Nonlinear Equations	5 wks	Apr/May