Algebra 2 Honors Pacing Guide

Marking Period 1

**Unit 1: Quadratic Functions and Equations**

- Vertex Form of a Quadratic Function
- Standard Form of a Quadratic Function
- Solving Quadratics by graphing and the Zero Product Property
- Complex Numbers and Operations
- Solving Quadratics Using Square Roots
- Completing the Square
- The Quadratic Formula
- Quadratic Regression

**Unit 2: Polynomial Functions**

- Graphing Polynomial Functions
- End behavior using Limit Notation
- Adding and Subtracting Polynomials
- Pascal's Triangle and the Binomial Theorem

Marking Period 2

- Multiplying Polynomials
- Synthetic Division of Polynomials
- Long Division of Polynomials (including fractional coefficients)
- Factoring Polynomials
- Remainder and Factor Theorem
- Zeros of Polynomial Functions
- Rational Root Theorem (Brief)
- Fundamental Theorem of Algebra
- Conjugate Root Theorem
- Transformations of Polynomial Functions (Identify/Writing From Verbal description)
- Polynomial Regression

**Unit 3: Exponential and Logarithmic Functions**

- Exponential Growth and Decay (Add emphasis on Domain and Range)
- Inverse Functions/Relations
- Logarithmic Functions (Add emphasis on Domain and Range)
- Properties of Logarithms
- Exponential and Logarithmic Equations and Inequalities
- Natural base e
- Transforming Exponential and Logarithmic Functions (Add emphasis on how the Domain and range changes)
- Exponential and Logarithmic Regression Models

Marking Period 3

**Unit 4: Trigonometric Functions**

Right Angle Trigonometry
Angles of Rotation
Unit Circle ** Students must understand how the special right triangles relate to The unit circle. Students must know and be able to use the unit Circle from memory (no reference sheet).
Inverse Trigonometric Functions
Law of Sines
Law of Cosines

**Unit 5: Trigonometric Graphs**

Graph of Sine
Graph of Cosine
Graph of Tangent
** For all 3 functions, students must be able to identify transformations, graph By hand, and write equations from a given graph. Must be able to identify Asymptotes for tangent transformations.

Marking Period 4

**Unit 6: Rational Functions**

Variation Functions
Multiplying and Dividing Rational Expressions
Adding and Subtracting Rational Functions
Graphing Rational Functions and Identifying Asymptotes
**Special Attention to identifying the domain of a rational function using interval notation.

**Unit 7: Radical Functions**

Radical Expressions and Rational Exponents
Radical Functions (Add emphasis on Domain and Range in interval notation)
Solving Radical Equations and Inequalities

**Unit 8: Functions**

Comparing Average Rate of Change (real-world applications) and EXPLAIN its meaning in the context of the problem.
Operations with Functions (Adding/Subtracting/Multiplying/Dividing)
Composition of Functions
Evaluating Piecewise Functions