**2016-2017**

**Algebra 2 Curriculum**

**Unit 1 (25 days)**

**Solving Linear Equations and Absolute Value Equations – 5 Days**

½ day 1.1 Expressions and Formulas

½ day 1.2 Properties of Real Numbers

½ day 1.3 Solving Equations

½ day 1.5 Solving Inequalities

1 day 1.4 Solving Absolute Value Equations

1 day 1.6 Solving Compound and Absolute Value Inequalities

1 day Review/Quiz

**Solving Quadratic Equations and Complex Numbers – 9 days**

½ day 0.2 Foiling (supplement (a+b)2)

2 ½ day 0.3 Factoring Polynomials

1 day 4.3 Solving Quadratic Equations by Factoring

3 day 4.4 Complex Numbers (1 day simplifying radicals/2 day operations)R

1 day 4.6 The Quadratic Formula and the Discriminant

1 day Review/Test

**Graphing Quadratic Functions – 5 days**

1 day 4.1 Graphing Quadratic Functions (Standard Form)

1 day 4.7 Transformations of Quadratic Graphs (Vertex Form)

1 day 4.8 Quadratic Inequalities

1 day Review

1 day Test

Benchmark 1

**Unit 2**

**Polynomial Functions and Solving Radical Functions – 9-11 Days**

2 days Rules of Exponents

1 day Classify, Add, and Subtract Polynomials

½ day Multiply Polynomials

½ day Divide Polynomials using Long Division

½ day Divide Polynomials using Synthetic Division

½ day Determine Factors using Synthetic Division

2 days 5.3 & 5.4 Graphing Polynomials

2 days Project

**Rational Functions – 7 days**

1 day 8.1 Multiplying and Dividing Rational Expressions

2 days 8.2 Adding and Subtracting Rational Expressions

2 days 8.6 Solving Rational Equations and Inequalities

1 day Review

1 day Test

**Geometric Sequences and Binomial Distribution - WEST Time**

10.3 Geometric Sequences and Series

10.6 The Binomial Theorem

Benchmark 2

END OF 1ST SEMESTER

**Unit 4**

**Linear Relations and Functions - 9 days or 5 days**

½ day 0.1 Representing Functions

½ day 2.1 Relation and Functions

½ day 2.2 Linear Relations and Functions

½ day 2.3 Rate of Change and Slope (possibly use for non-tested also)

1 day Review/Quiz

1 day 2.4 Writing Linear Equations(possibly use for non-tested also)

1 day 2.5 Scatter Plots and Lines of Regression

1 day 2.6 Special Functions (Honors only)

1 day 2.7 Parent Functions and Transformations

1 day 2.8 Graphing Linear and Absolute Value Inequalities

1 day Review

1 day Test

**Systems of Equations and Inequalities - 6 days**

3 days 3.1 Solving Systems of Equations (make sure to imbed applications!)

1 day 3.2 Solving Systems of Inequalities by Graphing

3.3 Optimization with Linear Programming (optional West time)

3.5 Operations with Matrices (optional West time)

3.6 Multiplying Matrices (optional West time)

3.7 Solving Systems of Equations Using Cramer’s Rule (optional West time)

3.8 Solving Systems of Equations Using Inverse Matrices (optional West time)

1 day Review

1 day Test

**Inverses and Radical Functions and Relations - 10 days**

1 day 6.1 Operations on Functions

1 day 6.2 Inverse Functions and Relations

1 day 6.3 Square Root Functions (no inequalities, add Cube Roots)

1 day 6.4 *n*th Roots

1 day Review/Quiz

1 day 6.5 Operations with Radical Expressions

1 day 6.6 Rational Exponents

1 day 6.7 Solving Radical Equations and Inequalities

1 day Review

1 day Test

**Exponential and Logarithmic Functions and Relations - 11 days**

1 day 7.1 Graphing Exponential Functions

1 day 7.3 Logarithms and Logarithmic Functions

1 day 7.2 Solving Exponential Equations (no inequalities)

2 days 7.4 Solving Logarithmic Equations (no inequalities)

1 day Review/Quiz

1 day 7.5 Properties of Logarithms

½ day 7.6 Common Logarithms

½ day 7.7 Base *e* and Natural Logarithms

1 day 7.8 Using Exponential and Logarithmic Functions

1 day Review

1 day Test

**Midpoint and Distance Formula -**

9.1 Midpoint and Distance Formulas - West time

**Arithmetic Sequences and Series**

10.2 Arithmetic Sequences and Series - West Time

Benchmark 4

**Unit 3**

**Trigonometry - 11 days (including days)**

2-3 days 12.1 Trigonometric Functions in Right Triangles

1 day Applications of Trig Functions

1 day 12.2 Angles and Angle Measure

1 day 12.3 Trigonometric Functions of General Angles

1 day 12.4 Law of Sines

1 day 12.5 Law of Cosines

1 day Review

1 day Test

Benchmark 3

**Unit 5 - West Time**

**Statistics and Probability**

0.4 Counting Techniques

 0.5 Adding Probabilities

 0.6 Multiplying Probabilities

 0.9 Measures of Center, Spread, and Position

11.1 Designing a Study

11.2 Distributions of Data

11.3 Probability Distributions

11.4 The Binomial Distribution

11.5 The Normal Distribution

11.6 Confidence Intervals and Hypothesis Testing

Benchmark 5