



Three Rivers School District

# PLANNED COURSE STATEMENT

<b>Course Title: Algebra II</b>	<b>Grade Level(s): 9-12</b>
<b>Length of Course: 2 Semesters</b>	<b>Credit Area: Math</b>
<b>Prerequisite: Geometry</b>	<b>Amount of Credit: 1.0 (0.5/semester)</b>
<b>Adopted/Supplemental Materials: Houghton Mifflin Harcourt, Big Ideas Math, Algebra II, 2014</b>	
<b>Dual Credit Articulation:</b>	<b>RCC Math 65 (semester 1) RCC Math 95 (semester 2)</b>

## COURSE DESCRIPTION:

Students will review and increase their depth of understanding of linear, quadratic, rational, polynomial, exponential, and logarithmic. Students will be introduced to complex numbers as it pertains to quadratics and solve equations with complex solutions.

This course is in alignment with RCC (Rogue Community College) MATH 65 & 95. The RCC Math 65 test will be administered at the end of semester 1 and the Math 95 at the end of semester 2. MATH 65& 95 are not transferable to any other Community College or University.

## COURSE GOALS:

### Basics of Functions

- Introduction to Functions
- Graphs of Functions
- The Algebra of Functions
- Composite and Inverse Functions

### Radicals, Radical Functions, and Rational Exponents

- Radical Expressions and Functions
- Rational Exponents
- Multiplying and Simplifying Radical Expressions
- Adding, Subtracting, and Dividing Radical Expressions
- Multiplying with More Than One Term and Rationalizing Denominators
- Radical Equations
- Complex Numbers

### Quadratic Equations and Functions

- The Square Root Property and Completing the Square
- Distance and Midpoint Formulas
- The Quadratic Formula

Quadratic Functions and Their Graphs with curve fitting

### **Exponential and Logarithmic Functions**

Exponential Functions

Logarithmic Functions

Properties of Logarithms

Exponential and Logarithmic Equations

Modeling Data - Exponential Growth and Decay with curve fitting

### **Exponents and Polynomials**

Adding and Subtracting Polynomials

Multiplying Polynomials

Special Products

Polynomials in Several Variables

Dividing Polynomials

Long Division of Polynomials and Synthetic Division

Negative Exponents and Scientific Notation

### **Factoring Polynomials**

The Greatest Common Factor and Factoring By Grouping

Factoring Trinomials Whose Leading Coefficient is 1

Factoring Trinomials Whose Leading Coefficient is not 1

Factoring Special Forms

A General Factoring Strategy

Solving Quadratic Equations by Factoring

### **Rational Expressions**

Rational Expressions and their Simplifications

Multiplying and Dividing Rational Expressions

Adding and Subtracting Rational Expressions with the Same Denominator

Adding and Subtracting Rational Expressions with Different Denominators

Complex Rational Expressions

Solving Rational Equations

Applications Using Rational Equations and Proportions

Modeling Using Variation

### **Inequalities and Problem Solving**

Reviewing Linear Inequalities and Using Inequalities in Business Applications

Compound Inequalities

Linear Inequalities in Two Variables

### **ASSESSMENT STRATEGIES:**

Daily work, starter and exit activities, participation, written exams, performance tasks, oral and written student presentations on specific concepts and processes, and a notebook including daily notes.

### **ACCOMMODATIONS AND MODIFICATIONS:**

Any student who feels the course is moving too slowly and demonstrates mastery of the subject matter by consistently exceeding expectations for regular assignments is encouraged to meet with the teacher for more rigorous assignments and projects. More rigorous work will include alternate assignments and projects, not additional assignments. Work will be graded using the same standards for work completed by other students in the class. Conversely, a student with an IEP who needs more time to complete the work may have assignments modified to meet his/her needs.

### **CAREER RELATED LEARNING STANDARDS:**

Students will demonstrate appropriate workplace behaviors (e.g. maintain regular attendance and be on time), apply decision-making and problem-solving techniques, demonstrate effective teamwork,

apply the principles of effective communication to give and receive information, acquire, use, and transfer information, assess the relationship of educational achievement to career goals, research and analyze career options, assess characteristics related to personal, educational, and career goals, and demonstrate academic knowledge and technical skills required for successful employment.