

## MODESTO CITY SCHOOLS COURSE OUTLINE

<b>Course Title</b>	Algebra II Honors OLL S1	Algebra II Honors OLL S2
<b>Course Number</b>	Oll30211	Oll30212
<b>Recommended Grade</b>	<input type="checkbox"/> 7 <input type="checkbox"/> 8 <input checked="" type="checkbox"/> 9 <input checked="" type="checkbox"/> 10 <input checked="" type="checkbox"/> 11 <input checked="" type="checkbox"/> 12	
<b>Duration</b>	<input type="checkbox"/> Quarter <input checked="" type="checkbox"/> Semester	
<b>Credit</b>	<input type="checkbox"/> 2.5 <input checked="" type="checkbox"/> 5 <input type="checkbox"/> 10	
<b>Repeatable for Credit</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<b>Required for Graduation</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<b>Meets Graduation Requirement</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<b>CALPADS Course Number</b>	9252	
<b>CALPADS Course Name</b>	Algebra II	
<b>Meets UC/CSU Requirements</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, which area? <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> F <input type="checkbox"/> G	
<b>CTE Course</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<b>CTE Course Level</b>	<input type="checkbox"/> Introduction <input type="checkbox"/> Concentrator <input type="checkbox"/> Capstone N/A	
<b>Part of a Course Pathway</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, which pathway?	
<b>Credential Requirements</b>		
<b>Replaces</b>	N/A	
<b>Recommended Prerequisites</b>	N/A	
<b>Aligned to Standards Date</b>		
<b>Content Delivery Method</b>	<input type="checkbox"/> Instructor Led <input checked="" type="checkbox"/> Online Provider Modesto Virtual Academy	
<b>Other Information</b>		
<b>Board Approval Date</b>		
<b>Implementation Date</b>	Fall 2020	

**Course Description:**

**Required Text(s):** (Title, Publisher, Year):

**Supplementary Materials(s):**

**Course Name:** Algebra II v14

**Course Credit:** 1.0

**Estimated Completion Time:** 2 Semesters / 32-36 Weeks

**Course Description:** This course allows students to learn while having fun. Interactive examples help guide students' journey through customized feedback and praise. Mathematical concepts are applied to everyday occurrences such as earthquakes, stadium seating, and purchasing movie tickets. Students investigate the effects of an equation on its graph through the use of technology. Students have opportunities to work with their peers on specific lessons.

Algebra II is an advanced course using hands-on activities, applications, group interactions, and the latest technology.

**Discussion-Based Assessments:** One per module

**Collaboration Activities:** 2.02, 4.08, 6.05, and 7.07

**Honors Lessons:** There are a total of two honors assessments which are project-based and contain 20% summative and 80% formative tasks.

**Course Profile:**

Honors Assessments	2
Automated Quizzes	97
Project-Based Assessments	4
Labs	N/A
Writing Assignments	34
Graded Assessments	135
Non-Graded Assessments	65

**Types of Assessments:**

Multiple Choice	X	Essay	X
Worksheets		Collaborative	X
Web 2.0	X	Short Response	X
Project – Based	X	Labs	
Self - Check	X	Discussion-Based Assessments	X

## **Scope and Sequence:**

### **Segment I Concepts**

#### Module 1

- Algebra 1 Review
- Introduction to Functions
- Graphing Linear Equations and Inequalities
- Writing the Equation of a Line
- Comparing Functions

#### Module 2

- Rational Exponents
- Properties of Rational Exponents
- Solving Radical Equations
- Complex Numbers
- Operations of Complex Numbers

#### Module 3

- Review of Polynomials
- Polynomial Operations
- Greatest Common Factors and Special Products
- Factoring by Grouping
- Sum and Difference of Cubes
- Graphing Quadratics
- Completing the Square
- Solving Quadratic Equations
- Solving Quadratic Equations with Complex Solutions
- Investigating Quadratics

#### Module 4

- Polynomial Long Division
- Polynomial Synthetic Division
- Theorems of Algebra
- Rational Root Theorem

- Solving Polynomial Equations
- Graphing Polynomial Equations
- Polynomial Identities and Proofs

### Module 5

- Simplifying Rational Expressions
- Multiplying and Dividing Rational Expressions
- Adding and Subtracting Rational Expressions
- Simplifying Complex Fractions
- Discontinuities of Rational Expressions
- Asymptotes of Rational Functions
- Solving Rational Equations
- Applications of Rational Equations

## **Segment II Concepts**

### Module 6

- Solving Systems of Equations Algebraically
- Solving Systems of Non-Linear Equations
- Graphing Systems of Linear Equations
- Graphing Systems of Non-Linear Equations

### Module 7

- Exponential Functions
- Logarithmic Functions
- Properties of Logarithms
- Solving Exponential Equations with Unequal Bases
- Graphing Exponential Functions
- Graphing Logarithmic Functions
- Exponential and Logarithmic Functions

### Module 8

- Arithmetic Sequences
- Arithmetic Series

- Geometric Sequences
- Geometric Series
- Sigma Notation
- Infinite, Convergent, and Divergent Series
- Graphing Series

### Module 9

- Events and Outcomes in a Sample Space
- Independent Probabilities
- Conditional Probability
- Normal Distribution
- Models of Populations
- Using Surveys
- Using Experiments

### Module 10

- Introduction to the Unit Circle
- Unit Circle and the Coordinate Plane
- Trigonometric Functions with Periodic Phenomena
- Pythagoras, Trigonometry, and Quadrants
- Functions of All Types