Curriculum Map: Honors CC Algebra II

Course: HONORS CC ALGEBRA II Sub-topic: Algebra

Grade(s): 10 to 11

Course Description: Honors CC Algebra II is an honors level mathematics class for students who have successfully taken either CC Algebra I or Keystone 8 and either Geometry or Honors Geometry. Emphasis is placed on strengthening and extending the skills learned in these previous courses. Topics covered include: factoring, exponents, radicals and radical equations, complex numbers, quadratic equations, rational exponents, polynomial identities and equations of higher order, rational expressions and equations, solving and graphing equations and inequalities of various types, polynomials, exponential, transformations across function types, probability and applications. Due to the honors level, students should expect a faster-paced environment with more rigorous problem-solving, discussions for deeper understanding of the concepts listed above, and extended applications. Graphing calculators will be used extensively, and therefore it is strongly recommended that each student have a TI-84+ calculator for this course.

Unit: Unit 0 - Introduction, Syllabus

Topic: 0.1 Welcome and Syllabus
   Minutes for Topic: 86

Topic: 0.2 Mathematical Requirements and Expectations
   Minutes for Topic: 86

Unit: Unit 1 - Review, Graphs, Linear Equations, Exponents, Radicals, Sequences and Series

Topic: 1.1 Review of Skills from Previous Math Classes
   Minutes for Topic: 172

Topic: 1.2 Graphs of Equations
   Minutes for Topic: 172

Topic: 1.3 Circles and Symmetry
   Minutes for Topic: 344

Topic: 1.4 Linear Equations in one variable
   Minutes for Topic: 172

Topic: 1.5 Exponents and Radicals
   Minutes for Topic: 172

Topic: 1.6 Sequences and Series
   Minutes for Topic: 258

Topic: 1.7 Review and Test
   Minutes for Topic: 172

Unit: Unit 2 - Factoring, Rational Expressions (including Complex), Solving Equations involving Rational Expressions

Topic: 2.1 Factoring - all types (including Multiple Variable, Higher Power)
   Minutes for Topic: 344

Topic: 2.2 Rational Expressions
   Minutes for Topic: 86

Topic: 2.3 Complex Rational Expressions
   Minutes for Topic: 86

Topic: 2.4 Solve Equations involving Rational Expressions
   Minutes for Topic: 172

Topic: 2.5 Review and Test
   Minutes for Topic: 172

Unit: Unit 3 - Modeling with Linear Equations (Application Problems)

Topic: 3.1 Number Problems, Percent Problems, Consecutive Integers, Simple Interest
   Minutes for Topic: 86

Topic: 3.2 Cost, Percent Change, Dimensions, Similar Triangles, Averages
Minutes for Topic: 102

Topic: 3.3 Distance and Interest (simple, two accounts)
Minutes for Topic: 172

Topic: 3.4 Mixture Applications
Minutes for Topic: 172

Topic: 3.5 Review and Test
Minutes for Topic: 86

Unit: Unit 4 - Quadratic Equations and Applications

Topic: 4.1 Solving Quadratics (four methods)
Minutes for Topic: 258

Topic: 4.2 Graphing Quadratics and Types of Quadratics
Minutes for Topic: 172

Topic: 4.3 Calculator, Domain, Range, Writing Quadratics Equations
Minutes for Topic: 86

Topic: 4.4 Quadratic Applications
Minutes for Topic: 258

Topic: 4.5 Review and Test
Minutes for Topic: 86

Unit: Unit 5 - Complex Numbers

Topic: 5.1 Complex Numbers
Minutes for Topic: 86

Unit: Unit 6 - Rational Exponents, Radical Equations, Other Equations

Topic: 6.1 Rational Exponents including Negative
Minutes for Topic: 344

Topic: 6.2 Radical Equations (square roots; all solutions)
Minutes for Topic: 258

Topic: 6.3 Higher Order Polynomials (all solutions)
Minutes for Topic: 344

Topic: 6.4 Review Solving All Types of Equations
Minutes for Topic: 172

Topic: 6.5 Review and Test
Minutes for Topic: 172

Unit: Unit 7 - Linear Inequalities in One Variable, Other Types of Inequalities

Topic: 7.1 Interval Notation
Minutes for Topic: 86

Topic: 7.2 Solving Inequalities with Answers as Interval Notation
Minutes for Topic: 172

Topic: 7.3 Polynomial Inequalities
Minutes for Topic: 172

Topic: 7.4 Rational Inequalities
Minutes for Topic: 258

Topic: 7.5 Review and Test
Minutes for Topic: 172

Unit: Unit 8 - Functions

Topic: 8.1 Review Functions including Domain, Range
Minutes for Topic: 86

Topic: 8.2 Difference Quotient
Minutes for Topic: 86

Topic: 8.3 Analyzing Graphs of Functions
Minutes for Topic: 258

Topic: 8.4 Parent Functions
Minutes for Topic: 86

Topic: 8.5 Transformations of Functions
Minutes for Topic: 172

Topic: 8.6 Operations with Functions (inc Composition)
Minutes for Topic: 172

Topic: 8.7 Inverse Functions
Minutes for Topic: 86

Topic: 8.8 Review and Test
Minutes for Topic: 172

Unit: Unit 9 - IF GET HERE -- Polynomial Functions of Higher Degree, Polynomial Division

Topic: 9.1 Polynomial Division and Synthetic Division

Topic: 9.2 Zeros of Polynomial Functions

Unit: Unit 10 - Review and Final Exam

Topic: 10.1 Review for Final Exam
Minutes for Topic: 172

Topic: 10.2 Final Exam
Minutes for Topic: 172