

HM1 : Algebra 2

Course Curriculum

FALL SESSION (SEP - DEC) - 12 Classes	
Units	Topics
Unit 1A	<i>Chapter 1: Fundamental Concepts</i> <ul style="list-style-type: none"> • The Real Numbers • Operations With Real Numbers • Exponents & Order of Operations
Unit 1B	<i>Chapter 1: Fundamental Concepts (continued)</i> <ul style="list-style-type: none"> • Algebraic Expressions • Simplifying Algebraic Expressions • Exponents & Scientific Notation
Unit 1C	<i>Homework Review, 1 on 1 with Teacher, Bi-Weekly Test</i>
Unit 1D	<i>Chapter 2: Equations and Inequalities</i> <ul style="list-style-type: none"> • Solving Equations • Linear Equations and Modeling • Sets and Inequalities
Unit 1E	<i>Chapter 2: Equations and Inequalities (continued)</i> <ul style="list-style-type: none"> • Intersections and Unions • Absolute-Value Equations & Inequalities • Summary and Practice Quiz
Unit 1F	<i>Homework Review, 1 on 1 with Teacher, Bi-Weekly Test</i>
Unit 2A	<i>Chapter 3: Functions and Graphs</i> <ul style="list-style-type: none"> • Graphing Equations • Functions • Domain, Range, and Relations
Unit 2B	<i>Chapter 3: Functions and Graphs (continued)</i> <ul style="list-style-type: none"> • Linear Functions • Graphing Linear Equations • Straight Line Equations

Unit 2C	<i>Homework Review, 1 on 1 with Teacher, Bi-Weekly Test</i>
Unit 2D	<i>Chapter 4: Systems of Equations & Inequalities</i> <ul style="list-style-type: none"> • Systems of Equations • Solving Systems by Substitution
Unit 2E	<i>Chapter 4: Systems of Equations & Inequalities (continued)</i> <ul style="list-style-type: none"> • Solving Systems by Elimination • Systems of Linear Inequalities in Two Variables • Summary and Practice Quiz
Unit 2F	<i>Homework Review, 1 on 1 with Teacher, Bi-Weekly Test</i>
WINTER SESSIONS (JAN - MAR) - 12 Classes	
Unit 3A	<i>Chapter 5: Polynomial Functions</i> <ul style="list-style-type: none"> • polynomials, • degree of polynomial • evaluating polynomial functions
Unit 3B	<i>Chapter 5: Polynomial Functions (continued)</i> <ul style="list-style-type: none"> • FOIL method to multiply binomials • Special binomial products • greatest common factor • Factoring polynomials by grouping • Factoring $x^2 + bx + c$
Unit 3C	<i>Homework Review, 1 on 1 with Teacher, Bi-Weekly Test</i>
Unit 3D	<i>Chapter 5: Polynomial Functions (continued)</i> <ul style="list-style-type: none"> • Factoring trinomials • Factoring $ax^2 + bx + c$ • Factoring Special Products
Unit 3E	<i>Chapter 6: Rational Expressions</i> <ul style="list-style-type: none"> • Rational Expressions & Multiplication • Adding & Subtracting Rational Expressions • Long division of polynomials • Synthetic division
Unit 3F	<i>Homework Review, 1 on 1 with Teacher, Bi-Weekly Test</i>
Unit 4A	<i>Chapter 6: Rational Expressions (continued)</i> <ul style="list-style-type: none"> • Complex Rational Expressions • Rational Equations

	<ul style="list-style-type: none"> • Applications of Rational Equations • Number problems, Work problems, Proportions, Motion problems
Unit 4B	Chapter 7: Radicals <ul style="list-style-type: none"> • Roots and Radicals • Square roots • Square root functions • Odd and Even roots • Rational Exponents
Unit 4C	Homework Review, 1 on 1 with Teacher, Bi-Weekly Test
Unit 4D	Chapter 7: Radicals (continued) <ul style="list-style-type: none"> • Simplify Radicals Using Product & Quotient Rules • Adding and Subtracting Radicals • Multiplying Radicals
Unit 4E	Chapter 8: Radicals (continued) <ul style="list-style-type: none"> • Dividing Radicals • Solving Equations With Radicals • Complex Numbers
Unit 4F	Homework Review, 1 on 1 with Teacher, Bi-Weekly Test
SPRING SESSION (APR - JUN) - 12 Classes	
Unit 5A	Chapter 9: Quadratic Equations and Inequalities <ul style="list-style-type: none"> • Solving Quadratic Equations • Completing the Square • The Quadratic Formula
Unit 5B	Chapter 9: Quadratic Equations and Inequalities (continued) <ul style="list-style-type: none"> • Applications of Quadratic Equations • Discriminant of Quadratic Equations • Solving Equations in Quadratic Form • Quadratic and Rational Inequalities
Unit 5C	Homework Review, 1 on 1 with Teacher, Bi-Weekly Test
Unit 5D	Chapter 9: Conics <ul style="list-style-type: none"> • Circles • The Distance Formula • Parabolas
Unit 5E	Chapter 9: Conics (continued)

	<ul style="list-style-type: none"> • Ellipses • Hyperbolas • The General Conic Form • Nonlinear Systems of Equations
Unit 5F	<i>Homework Review, 1 on 1 with Teacher, Bi-Weekly Test</i>
Unit 6A	Chapter 10: Exponential and Logarithmic Functions <ul style="list-style-type: none"> • Exponential Functions • Inverse and Composite Functions • Logarithmic Functions
Unit 6B	Chapter 10: Exponential and Logarithmic Functions (continued) <ul style="list-style-type: none"> • Rules of Logarithms • Common and Natural Logarithms • Exponential and Logarithmic Equations
Unit 6C	<i>Homework Review, 1 on 1 with Teacher, Bi-Weekly Test</i>
Unit 6D	Chapter 11: Determinants and Matrices <ul style="list-style-type: none"> • Determinants • Expansion by diagonals, • Expansion by minors, • Expansion by any row/column
Unit 6E	Chapter 11: Determinants and Matrices (continued) <ul style="list-style-type: none"> • Cramer's Rule • Matrices • Matrix Inverse • Gauss-Jordan Elimination method to find A^{-1}
Unit 6F	<i>Homework Review, 1 on 1 with Teacher, Bi-Weekly Test</i>