

Conceptual Algebra II

Instructor:

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Room 208

Prerequisite: Satisfactory completion of Algebra I and Geometry. Students who have completed Algebra I but have not completed Geometry will need special permission from the Department Chair to take Algebra II and Geometry out of order.

Description: The pace of this course is determined by the needs of the students enrolled. This course will cover the fundamentals of Algebra II. Coursework includes an examination of real numbers, graphing, and solving linear and quadratic equations and inequalities, solving systems of equations in two variables, modeling with exponential equations, performing operations with radicals, factoring and applying probability and statistics. Upon completion of this course, students will be prepared for Senior Math or a college level Algebra course.

Graduation Standards

- 1- Reason and model quantitatively, using units and number systems to solve problems.
- 2- Interpret, represent, create and solve algebraic expressions.
- 3- Interpret, analyze, construct, and solve linear, quadratic, and trigonometric functions.

Unit 1

Review of Basic Concepts

Summary	A brief review of basic operations in the real number system with hands on applications.
Performance Indicators Assessed in Unit	1B - Apply properties within the real number system. 2A - Interpret the structure of expressions. 2B - Write expressions in equivalent forms to solve problems. 2G - Create equations that describe numbers or relationships. 2H - Understand solving equations as a process of reasoning and explain the reasoning.

Unit 2

Measurements and Percentages

Summary	Real world problem solving involving percents and measurement conversions. Topics include percent and measurement problems; simple geometry problems for area and volume, percent equivalencies; and estimating. Dimensional analysis of the various units of measure and how to quickly convert from one unit to another.
Performance Indicators Assessed in Unit	1C - Reason quantitatively and use units to solve problems. 2B - Write expressions in equivalent forms to solve problems 2H - Understand solving equations as a process of reasoning and explain the reasoning. 4L - Explain volume formulas and use them to solve problems.

Unit 3

Probability and Statistics

Summary	An overview of how to interpret basic data sets. Investigate various ways to display data.
Performance	5A - Summarize, represent, and interpret data on a single count

e Indicators Assessed in Unit	<p>or measurement variable.</p> <p>5B – Summarize, represent, and interpret data on 2 categorical and quantitative variables.</p> <p>5D – Understand and evaluate random processes underlying statistical experiments.</p> <p>5E – Make inferences and justify conclusions from sample surveys, experiments, and observational studies.</p> <p>5F – Understand independent and conditional probability and use them to interpret data.</p>
Unit 4	Linear Algebra
Summary	Covering the numerous real world uses of Algebraic techniques.
Performanc e Indicators Assessed in Unit	<p>2A – Interpret the structure of expressions.</p> <p>2G – Create equations that describe numbers or relationships.</p> <p>2I – Solve equations and inequalities in one variable.</p> <p>2J – Solve systems of equations.</p> <p>3A – Understand the concept of a function and use function notation.</p> <p>3B – Interpret functions that arise in applications in terms of context.</p> <p>3C – Analyze functions using different representations.</p> <p>3D – Build a function that models a relationship between two quantities.</p>
Unit 5	Exponential Functions
Summary	Extend knowledge of functions to creating, graphing, and analyzing exponential functions in the real world.
Performanc e Indicators Assessed in Unit	<p>1A-Extend the properties of exponents to rational exponents.</p> <p>2A – Interpret the structure of expressions.</p> <p>3F – Construct and compare linear, quadratic, and exponential models and solve problems.</p> <p>3G – Interpret expressions for functions in terms of the situation they model.</p> <p>4B – Understand congruence in terms of rigid motions.</p>
Unit 6	Review of Quadratics
Summary	An overview of Quadratic equations and functions.
Performanc e Indicators Assessed in Unit	<p>2D – Understand the relationship between zeros and factors of polynomials.</p> <p>2H – Understand solving equations as a process of reasoning and explain the reasoning.</p> <p>2K – Represent and solve equations and inequalities graphically.</p> <p>3C – Analyze functions using different representations.</p> <p>3F – Construct and compare linear, quadratic, and exponential models and solve problems.</p>
Unit 7	Radical Expressions and Equations
Summary	Simplify radical expressions and solve radical equations.
Performanc e Indicators Assessed in Unit	<p>1A – Extend properties of exponents to rational exponents.</p> <p>1D – Perform arithmetic operations on complex numbers.</p> <p>2B – Write expressions in equivalent forms to solve problems</p> <p>2H – solving equations as a process of reasoning and explain the reasoning.</p> <p>2I – Solve equations and inequalities in one variable.</p>

Summative Assessments Retake

- Students have the opportunity to retake summative assessments.
- The student must submit a retake form to the teacher within five (5) school days of the date that the summative assessment score is reported to the student.
- The highest score a student can receive on a retake or late assessment is a 75.
- The score achieved on a retake will replace the current score (even if the score is lower).
- If a student is making up a test from an absence, that assessment will be graded up to 100.

Grading of Formative Assessments

- Formative assessments will count as 20% of the grade.
 - Formative assessments may be scored on either a 0-100 scale or a 0-4 scale.
- The 0-4 scale will be represented in Power School as 4=100, 3=87, 2=77, and 1=67.
- The method of scoring of formative assessments will be determined by assignment.