



Course Curriculum Outline

Course Name: **Algebra I**

Grade Level(s): **8-10**

Course Description: The primary goal in Algebra 1 is to help students transfer their concrete knowledge into more abstract algebraic generalizations. Topics include recognizing and developing patterns using tables, graphs, and equations. In addition, manipulation of algebraic expressions and solving equations is addressed

Wisconsin State Standards

Learning Priority (Essential Standard)	Major Topics or Essential Questions
Seeing Structure in Expressions	• Interpret the structure of expressions. • Write expressions in equivalent forms to solve problems.
Arithmetic with Polynomials and Rational Expressions	• Perform arithmetic operations on polynomials. • Understand the relationship between zeros and factors of polynomials. • Use polynomial identities to solve problems. • Rewrite rational expressions.
Creating Equations	• Create equations that describe numbers or relationships.
Reasoning with Equations and Inequalities	• Understand solving equations as a process of reasoning and explain the reasoning. • Solve equations and inequalities in one variable. • Solve systems of equations. • Represent and solve equations and inequalities graphically

Text and Other Resources Used:

Glencoe



Course Curriculum Outline

Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments, and appreciate and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.



Course Curriculum Outline

Course Name: **Algebra II**

Grade Level(s): **10-12**

Course Description: This course is designed to build on algebraic and geometric concepts. It develops advanced algebra skills such as systems of equations, advanced polynomials, imaginary and complex numbers, quadratics, and concepts and includes the study of trigonometric functions. It also introduces matrices and their properties. It also helps each student to ready themselves for future college courses or career choices.

Wisconsin State Standards

Learning Priority (Essential Standard)	Major Topics or Essential Questions
Interpreting Functions	• I can understand the concept of a function and use function notation. • I can intercept functions that arise in applications in terms of the context. • I can analyze functions using different representations.
Building Functions	• I can build a function that models a relationship between two quantities • I can build new functions from existing functions.
Linear, Quadratic and Exponential Models	• I can construct and compare linear, quadratic, and exponential models and solve problems. • I can interpret expressions for functions in terms of the situation they model.
Trigonometric Functions	• I can extend the domain of trigonometric functions using the unit circle. • I can model periodic phenomena with trigonometric functions. • I can prove and apply trigonometric identities.



Course Curriculum Outline

Textbook/Other Resources Used:

Pearson Math

Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
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4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

HS Math



Course Curriculum Outline

Geometry

Grade Level(s): 9-12

Course Description: The focus of this course is primarily on geometric concepts. This course is a requirement to enter college and many technical school programs. This course applies the concepts learned in Algebra to the study of properties and measurements of figures in 2 and 3 dimensions. Topics include parallel and perpendicular lines, polygons, area and volume, similarity, congruence, right triangle trigonometry, and circles. It also emphasizes using logic and writing proofs to justify conjectures.

Wisconsin State Standards

Learning Priority (Essential Standard)	Essential Questions
Congruence	• I can experiment with transformations in the plane. • I understand congruence in terms of rigid motions. • I can prove geometric theorems. • I can make geometric constructions.
Similarity, Right Triangles and Trigonometry	• I understand similarity in terms of similarity transformations. • I can prove theorems involving similarity. • I can define trigonometric ratios and solve problems involving right triangles. • I can apply trigonometry to general triangles.
Circles	• I can understand and apply theorems about circles. • I can find arc lengths and areas of sectors of circles.
Expressing Geometric Properties with Equations	• I can translate between the geometric description and the equation for a conic section. • I can use coordinates to prove simple geometric theorems algebraically.



Course Curriculum Outline

Geometric Measurement and Dimension	• I can explain volume formulas and use them to solve problems. • I can visualize relationships between two-dimensional and three-dimensional objects.
Modeling with Geometry	• I can apply geometric concepts in modeling situations

Textbook/Other resources:

Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments, and appreciate and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.