Northern York County School District

Curriculum Overview

Course: Algebra II	
Grade Level: 10-12	
Development/Revision Date: May 2022	**Length of Time:** 180 Days
Course Description: This course reviews and extends many of the topics in Algebra I. Algebra II is recommended for the student who has successfully completed prior courses and now find their collegiate or post-graduation plans do not depend upon advanced mathematics. Content material includes a broad spectrum of Algebra II concepts with an emphasis on the integration of the graphing calculator to support and extend student learning of the many different functions of Algebra II.	
Course Objectives: • Understand how to simplify, graph, solve, and write linear functions, quadratic functions, polynomial functions, radical functions, exponential functions, logarithmic functions, and rational functions. • Solve linear and nonlinear systems of equations algebraically and graphically. • Utilize a graphing calculator to enhance understanding of algebraic functions. • Solve real-life problems that involve algebraic functions.	
Units: • Linear Functions • Quadratic Functions • Complex Numbers • Polynomial Functions • Rational Exponents and Radical Functions • Exponential and Logarithmic Functions • Rational Functions • Trigonometric Ratios and Functions	
Related Standards: CC.2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships. CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method. CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically CC.2.2.HS.C.2 Graph and analyze functions and use their properties to make connections between the different representations. CC.2.2.HS.C.6 Interpret functions in terms of the situations they model.	

Concepts:	**Competencies:**
• Linear Functions • Quadratic Functions • Complex Numbers • Polynomial Functions • Rational Exponents and Radical Functions • Exponential and Logarithmic Functions • Rational Functions • Trigonometric Ratios and Functions	• Transformation functions, build new functions from existing functions, model with linear functions and solve linear systems • Analyze the characteristics of quadratic functions, write equations of parabolas, introduce properties of conic sections, model with quadratic functions and

	graph transformations of quadratic functions
	• Solve quadratic equations with real solutions, refresh and extend the understanding of solving nonlinear systems of equations
	• Graph polynomial functions, write and solve polynomial equations
	• Graph radical functions, solve radical equations, perform operations with functions, compose functions, and find inverses of functions
	• Apply the properties of exponential and logarithmic functions to simplify, graph, and solve exponential and logarithmic functions including real-life applications
	• Simplify, graph, and perform operations with rational functions, solve rational equations including real-life applications
	• Evaluate trigonometric functions, model using trigonometric functions, and use basic trigonometric identities

Learning Activities:	**Performance Tasks:**
• Note-making (foldables and/or graphic organizers, class discussion, direct instruction, jig-saw) • Warm up Problems • Writing Prompts • Collaborative Activities • Guided Practice • Independent Practice	• Quizzes • Unit Test • Unit Project

Other Assessment Measures:
Homework, Classwork, Presentations

Textbook/Primary Resource: Ron Larson & Laurie Boswell, Algebra 2, Big Ideas Learning

Supplemental Resource Materials:
District created resources, Online resources