PETERS TOWNSHIP HIGH SCHOOL
COURSE SYLLABUS: ALGEBRA II B/TRIGONOMETRY FOUNDATIONS

Course Overview and Essential Skills

This course is a study of the language, concepts, and techniques of Algebra that will prepare students to approach and solve problems following a logical succession of steps. This course is the foundation for high school mathematics courses. Topics include the study of functions (linear and quadratic), systems of equations and inequalities, simplifying radicals and algebraic expressions, properties of real numbers and exponents, and exploring transformation. Real world applications are presented within the course content and a function's approach is emphasized.

Course Textbook and Required Materials

- *Algebra 2*, Holt McDougal, ISBN# 978-0-030-99576-7
- Online textbook: my.hrw.com (Students given login and password during first week of course.)
- Required daily materials: Textbook, Three-Ring Binder, Pencil, Graphing Calculator (TI-83 Plus, TI-84, or TI-84 Plus)

Course Outline of Material Covered:

Unit or Topic	Concepts/Skills/Resources	Timeframe
Foundations for Functions	*Sets of Numbers *Properties of Real Numbers *Square Roots *Simplifying Algebraic Expressions *Properties of Exponents *Relations and Functions *Function Notation *Exploring Transformations *Introduction to Parent Functions	7 weeks
Linear Functions	*Solving Linear Equations and *Inequalities (Graphing Substitution, Elimination) *Proportional Reasoning *Graphing Linear Functions *Writing Linear Functions *Linear Inequalities in Two Variables *Absolute Value Functions	8 weeks
Linear Systems	*Using Graphs and Tables to Solve Linear Systems *Using Algebraic Methods to Solve Linear Systems *Solving Systems of Linear Inequalities *Linear Programming	8 weeks
Factoring	*GCF *Binomials *Trinomials *Grouping	2 weeks

Quadratic Functions	*Using Transformations to Graph Quadratic Functions *Properties of Quadratic Functions in Standard Form *Solving Quadratic Equations by Graphing and Factoring *Completing the Square *Complex Numbers and Roots *The Quadratic Formula	8 weeks

*__Depending on the needs of the class or changes in the school year, the course outline is subject to change.__