
PETERS TOWNSHIP HIGH SCHOOL

COURSE SYLLABUS: ALGEBRA III/TRIG ACADEMIC

Course Overview and Essential Skills

Algebra III/Trigonometry Academic is a course designed for students who have successfully completed Algebra II and are working towards continuing their math knowledge into topics necessary to prepare them for Pre-Calculus or college-level Mathematics. Students will study functions and their graphs, Polynomial and Rational Functions, Exponential and Logarithmic Functions, Trigonometric Functions, Analytical Trigonometry, and Systems of Equations.

Essential skills acquired throughout the year will include evaluating, recognizing, and applying functions graphically, numerically, and algebraically. Students will also be able to make connections between the functions studied and real-world situations.

Course Textbook and Required Materials

- *Algebra and Trigonometry – A Graphing Approach*, 7th edition, Cengage Learning
- www.cengagelearning.com
- Calculators, folder, notebook or 3-ring binder

Course Outline of Material Covered:

Unit or Topic	Course Activities/Resources	Timeframe
Prerequisites/Functions and their graphs	Factoring, Linear Functions, Parent Functions, Transformations of Functions, Function Operations, Composite Functions, Inverse Functions, Linear Regression	8 weeks
Polynomial and Rational Functions	Quadratic Functions, Polynomial Functions of Higher Order, Real Zeros of Functions, Complex Numbers, Fundamental Theorem of Algebra, Rational Functions and Asymptotes, Graphs of Rational Functions, Quadratic Regression	7 weeks
Exponential and Logarithmic Functions	Graphing Exponential and Logarithmic Functions, Properties of Logarithms, Solving Exponential and Logarithmic Equations, Exponential and Logarithmic Regression	6 weeks
Trigonometric Functions	Radian and Degree Measure, Unit Circle, Right Triangle Trigonometry, Graphing Trigonometric Functions, Inverse Trigonometric Functions	8 weeks
Solving Triangles	Law of Sines, Law of Cosines	5 weeks

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