



# Southern Lehigh School District

## High School Syllabus

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### Pre-Calculus

2013-2014

#### Course Description:

This subject is a study of functions. Algebraic functions and transcendental functions are studied in detail. Topics such as properties and graphs of polynomial functions and equations, rational functions, exponential, and logarithmic functions are included. The detailed study of the circular functions includes a formal treatment of both the theory and applications of trigonometry. A TI-83/84 graphing calculator will be an integral part of this course.

#### Course Content:

1. Exponential and Logarithmic Functions
  - Exponential Functions
  - Exponential Graphs
  - Logarithmic Functions
  - Logarithmic Graphs
  - Properties of Logarithms
  - Exponential Equations
  - Logarithmic Equations
  - Exponential Models
  - Logarithmic Models
2. Algebra
  - Solving Equations
  - Solving Inequalities
  - Algebra of Calculus
  - Graphical Representation of Data
  - Functions and their Graphs
  - Graphs of Equation
  - Linear Equations in Two Variables
3. Functions
  - Analyzing Graphs of Functions
  - Transformation of Functions
  - Combination of Functions
  - Inverses of Functions
4. Polynomial And Rational Functions
  - Quadratic Functions
  - Polynomial Functions of Higher Degree
  - Polynomial and Synthetic Division
  - Complex Numbers
  - Zeros of Polynomial Functions
  - Rational Functions
5. Trigonometry
  - Radian and Degree Measure

- Unit Circle
- Right Triangle Trigonometry
- Trigonometric Functions of any Angle
- Graphs of Trigonometric Functions
- Inverse Trigonometric Functions
- Laws of Sines
- Laws of Cosines
- 6. Analytic Trigonometry
  - Using Fundamental Identities
  - Verifying Trigonometric Identities

Required Textbooks and/or Other Reading/Research Materials

Precalculus, Fifth Edition Houghton Mifflin , copyright 2001 Scientific calculator, graphing calculator supplied in class.

Course Requirements:

Each student is required to complete all tests, projects and assignments. Failure to do so will affect the student's overall grade.

Grade Components/Assessments:

Grades will be based on a point system that will be converted to overall percentages. The following methods will be used, for the year, to assess and evaluate student performance.

- Tests: 40 % - 60 %
- Quizzes: 25 % - 35 %
- Homework: 15 % - 25 %
- Alternative Assessment: 5 % - 10 %

Additional alternative assessments are often included in one of the other three categories above. Based on our mission of giving every student a chance to reach his/her fullest potential, students will be allowed to make up work missed due to excused absences as stated in the student handbook and are encouraged to get additional help whenever necessary for better understanding of class concepts.

Each marking period is worth 20% of a student's overall grade. The midterm and final exam are each worth 10% of a student's overall average:

Quarter 1	20%
Quarter 2	20%
<b>Midterm</b>	<b>10%</b>
Quarter 3	20%
Quarter 4	20%
<b>Final</b>	<b>10%</b>

Required Summer Reading/Assignments:

No required summer reading/assignments.