



SOUTHERN LEHIGH SCHOOL DISTRICT
5775 Main Street
Center Valley, PA 18034

Planned Course for Mathematics

Course: Honors Precalculus

Standards:

This course is aligned to standards within the following Domains of the PA Core Standards:

HS.F	Number and Quantity
HS.D	Algebra
HS.C	Functions
HS.A	Geometry

Course Description:

The K-12 mathematics program within Southern Lehigh School District will provide opportunities for all students to develop the ability to independently apply mathematical knowledge and skills to real-world situations. A robust and coherent curriculum will prepare students to think and reason mathematically while requiring them to demonstrate a deep understanding of mathematics. Students will develop critical thinking, problem solving, innovation, collaboration, and communication skills. A focus will be placed on using mathematics as a key to understanding the world, in order to meet the challenges of a dynamic society.

HONORS PRECALCULUS is designed for students who have earned high levels of achievement in mathematics. This course is designed to prepare students for the study of calculus. A more complex understanding of prior mathematical knowledge will be applied to algebraic and geometric concepts. Content will include linear, polynomial, rational, exponential, logarithmic, and trigonometric functions, as well as their graphs. The six trigonometric functions will be investigated. Students will deepen their knowledge of systems, matrices and determinants. Additional topics in analytic geometry, conics and polar coordinates, sequences and series, limits and continuity will be investigated. **Summer work is required for this course.**

Prerequisite(s):

- Earn a minimum grade of an A- in Algebra II or a B+ in Honors Algebra II

Measurable objectives to be attained by students:

Specific objectives for this course are aligned to the Pennsylvania Core Standards for Mathematics and the Common Core State Standards for Mathematics as outlined in the Scope and Sequence for Precalculus.

Instructional Strategies:

Below is a list of suggested strategies for high-quality instruction in mathematics:

- Instructional components outlined in the *Framework for Teaching* by Charlotte Danielson
- Use Concrete Representational Abstract (CRA) representations
- Promote productive struggle
- Promote mathematical discourse
- Use precise mathematical language

Estimated Instructional Time:

77 minutes per day on an alternating A/B block schedule for one school year

Forms of Assessment to Measure Attainment of Course Objectives:

- Curriculum-based measures
- Benchmark Assessments
- Formative Assessments
- Summative Assessments

Resources:**Student Text Resources:**

Blitzer, Robert. *Precalculus, 6th Edition*. Pearson, 2018.

- Student Text Printed Version
- Student Text Online Version

Teacher Resources:

Blitzer, Robert. *Precalculus, 6th Edition*. Pearson, 2018.

- Teacher's Guide Printed Version
- Solutions Manual

Technology:

Scientific and graphing calculator

District approved supplemental technology

Other Resources:

Manipulatives

Teacher created resources

District approved supplemental resources