

WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

COURSE DESCRIPTION

Course Title: Pre-Calculus

Course Number: 10270

Course Prerequisites: Recommended grade average of 70% or higher in Algebra I College Preparatory, Algebra II College Preparatory, and Geometry College Preparatory

Course Description: In this course, students will understand and apply concepts, graphs and applications of a variety of families of functions, including polynomial, exponential, logarithmic, logistic and trigonometric. An emphasis will be placed on use of appropriate functions to model real world situations and solve problems that arise from those situations. A focus is also on graphing functions by hand and understanding and identifying the parts of a graph. A scientific and/or graphics calculator is recommended for work on assignments, and on examinations.

Pre-Calculus Part B covers the major units of Introductory Trigonometry and Graphs, Trigonometric Equations and Identities, Analytical Trigonometry, Sequences and Series, Conic Sections and an Introduction to Calculus. A focus is also on graphing functions by hand and understanding and identifying the parts of a graph.

Enduring Understandings of this course:

- Basic operations and transformations apply to all functions.
- Any type of equation can be reduced to a simply linear equation.
- There are many applications that can be solved by using linear and quadratic equations.
- There are many similarities between equations and inequalities.
- All common graphs can be transformed using the same basic transformations.
- There are several types of functions.
- All functions have graphical and algebraic applications.
- Functions can be used to solve real-life problems.
- Polynomial functions can be solved using techniques similar to those of other types of equations.
- There are numerous theorems that can be useful when solving polynomial equations.
- The graphs of rational functions involve the use of vertical, horizontal and slant asymptotes.
- There is a relationship between exponential and logarithmic equations.

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- Graphs of trigonometric functions model various real-world phenomena.
- Many situations that involve right triangles can be solved using trigonometric ratio and the Unit Circle is a tool that can help solve those problems.
- Numeric patterns can be modeled with explicit or recursive functions.
- Sums of numbers can be found using a variety of formulas.
- The similarities and differences between the equations of conic sections as well as their practical real-world uses.
- Limit and continuity is essential to the study of calculus.

Suggested Grade Level: Grades 11-12

Length of Course: Two Semesters

Units of Credit: 1

PDE Certification and Staffing Policies and Guidelines (CSPG) Required Teacher Certifications:

CSPG #50 Mathematics

To find the CSPG information, go to <https://www.education.pa.gov/Educators/Certification/Staffing%20Guidelines/Pages/default.aspx>

Certification verified by the WCSD Human Resources Department: ☒ Yes ☐ No

WCSD STUDENT DATA SYSTEM INFORMATION

Course Level: Academic

Mark Types: Check all that apply.

☒ F – Final Average ☐ MP – Marking Period ☐ EXM – Final Exam

GPA Type:

☐ GPAEL-GPA Elementary ☐ GPAML-GPA for Middle Level ☒ NHS-National Honor Society
☐ UGPA-Non-Weighted Grade Point Average ☒ GPA-Weighted Grade Point Average

State Course Code: 02110

To find the State Course Code, go to <https://nces.ed.gov/forum/sced.asp>, download the Excel file for SCED, click on SCED 6.0 tab, and chose the correct code that corresponds with the course.

TEXTBOOKS AND SUPPLEMENTAL MATERIALS

Board Approved Textbooks, Software, and Materials:

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Title: Click or tap here to enter text.

Publisher: Click or tap here to enter text.

ISBN #: Click or tap here to enter text.

Copyright Date: Click or tap here to enter text.

WCSD Board Approval Date: Click or tap here to enter text.

Supplemental Materials: Accelerate Education (Virtual Academy)

Curriculum Document

WCSD Board Approval:

Date Finalized: 6/10/2019

Date Approved: Click or tap to enter a date.

Implementation Year: 2019-2020

SPECIAL EDUCATION, 504, and GIFTED REQUIREMENTS

The teacher shall make appropriate modifications to instruction and assessment based on a student's Individual Education Plan (IEP), Chapter 15 Section 504 Plan (504), and/or Gifted Individual Education Plan (GIEP).

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SCOPE AND SEQUENCE OF CONTENT, CONCEPTS, AND SKILLS

Performance Indicator	PA Core Standard and/or Eligible Content	Month Taught and Assessed for Mastery
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ASSESSMENTS

PSSA Academic Standards, Assessment Anchors, and Eligible Content: The teacher must be knowledgeable of the PDE Academic Standards, Assessment Anchors, and Eligible Content and incorporate them regularly into planned instruction.

Formative Assessments: The teacher will utilize a variety of assessment methods to conduct in-process evaluations of student learning.

Effective formative assessments for this course include: [Click or tap here to enter text.](#)

Summative Assessments: The teacher will utilize a variety of assessment methods to evaluate student learning at the end of an instructional task, lesson, and/or unit.

Effective summative assessments for this course include: [Click or tap here to enter text.](#)