WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

COURSE DESCRIPTION

Course Title: Trigonometry CP
Course Number: 02103
Course Prerequisites:: Recommended grade of at least 75% in Algebra I CP, Algebra II CP, and Geometry CP

Course Description: Trigonometry is offered for students who want to continue a rigorous study of mathematics. The course begins by reviewing the real number system, characteristics of functions, and solving equations. Topics from right-triangle trigonometry lead to an in-depth study of the unit circle and trigonometric functions, their graphs, and their inverses. In their study of analytic trigonometry, students verify identities and solve trigonometric equations. The course covers the Law of Cosines, the Law of Sines, and vectors. It closes with a complete study of conics, parametric equations, and polar curves.

Suggested Grade Level: Grades 9-12
Length of Course: One Semester
Units of Credit: .5
PDE Certification and Staffing Policies and Guidelines (CSPG) Required Teacher Certifications: CSPG 50
To find the CSPG information, go to CSPG
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: 02201
To find the State Course Code, go to State Course Code, 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:

Title: Click or tap here to enter text.
Publisher: Schools PLP
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: Word processing software, Calculator

Curriculum Document

WCSD Board Approval:

Date Finalized: 1/20/2022
Date Approved: 2/7/2022
Implementation Year: 2021-2022 School Year

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).

Unit 1: Prerequisites to Trig

What will you learn in this unit?

- Real Number System
- Simplifying Expressions
- Solving Equations
- Functions – Domain and Range, Even and Odd, Inverse, Zeros and Intervals, Parent Functions, Reflections and Shifts, Vertical and Horizontal Stretch and Shrink
- Functions and Transformations

Unit 2: Foundations of Trig

What will you learn in this unit?

- Describing Angles
- Co-terminal Angles
- Complemental and Supplemental Angles
- Arc Length and Area of a Sector
- Linear and Angular Speed
- Unit Circle
- Trig Functions
- Evaluating Trig Functions
- Right Triangles
- Special Triangles
- Fundamental Trig Identities
- Elevation and Depression
- Trig Ratios
- Reference Angles and Identities

Unit 3: Trig Graphs and Inverses

What will you learn in this unit?

- Sine and Cosine – Curve, Amplitude, Period, Horizontal and Vertical Shift, Translations, Modeling
- Tangent, Cotangent
- Secant and Cosecant
- Graphing Trig Functions
- Inverses

Unit 4: Analytic Trigonometry

What will you learn in this unit?

- Evaluating Trig Functions
- Simplifying and Factoring Trig Expressions
- Verifying Identities
- Solving Trig Equations
- Sum and Difference
- Double Angle Formulas
- Power-Reducing Formulas
- Half-Angle Formulas
- Product and Sum Formulas
- Simplify and Solving Using Identifies

Unit 5: Oblique Triangles

What will you learn in this unit?

- Law of Sines and Law of Cosines
- Applications of Law of Sines and Law of Cosines
- Solving Triangles
- Area of Oblique Triangles
- Heron's Area Formula

Unit 6: Directions in Trigonometry

What will you learn in this unit?

- Bearing vs. Standard Position
- Vectors
- Trigonometric Form of Vectors
- Operations with Vectors
- Resultant Vectors
- Angle Between Vectors
- Applications of Vectors

Unit 7: Analytic Geometry

What will you learn in this unit?

- Inclination of Lines
- Angles between Lines
- Distance between objects
- Conics
- Parabolas and Parabola Reflective Property
- Ellipses
- Hyperbola

- Eccentricity
- Classifying Conics and Rotations
- Discriminants

Unit 8: Parametric and Polar

What will you learn in this unit?

- Intro to Parametric Equations
- Sketching Parametrics
- Parametric Applications
- Plotting Polar
- Graph Polar Equations
- Zeros and Max r-Values
- Circles and Limaçons
- Rose and Lemniscate curves
- Classify Special curves

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: quizzes and discussions

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: projects, essays, tests, and exams