

East Penn School District
Secondary Curriculum

A Planned Course Statement
for

Trigonometry, CP

Course # 317 Grade(s) 12

Department: Mathematics

Length of Period (mins.) 42 Total Clock Hours: 63

Periods per Cycle: 6 Length of Course (yrs.) 0.5

Type of Offering: required elective

Credit: 0.5

Adopted: 6/28/10

Developed by:

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Description of Course #317

Course Title: Trigonometry (C.P)

Description: This one semester course is designed primarily for seniors with average backgrounds in mathematics who wish to continue the study of mathematics for their fourth year of high school in preparation for college. It provides a study of trigonometric and circular functions, as well as graphing functions.

Goals: To provide a comprehensive study of trigonometric and circular functions.

Requirements: Scientific or graphing calculator, Geometry CP (recommended 74% or by petition) and Algebra II (recommended 74% or by petition), or Math Analysis (recommended 74% or by petition)

Text: Larson, Hostetler, Precalculus with Limits, Houghton Mifflin Co., 2007

*** *A graded project will be completed during this course.*

*** *Careers that utilize the mathematics taught in this course will be discussed during the semester.*

Key to Levels of Achievement (Listed with each learning objective)

Awareness (A):	Students are introduced to concepts, forms, and patterns.
Learning (L):	Students are involved in a sequence of steps and practice activities which involved further development and allow evaluation of process.
Understanding (U):	Students demonstrate ability to apply acquired concepts and skills to individual assignments and projects on an independent level.
Reinforcement (R):	Students maintain and broaden understanding of concepts and skills to accomplish tasks at a greater level of sophistication.

Unit	Num	Objective	Level	Content	Evaluation	Standard
Algebra Review	1	Students will be able to add, subtract, multiply, and factor polynomials	U	<ul style="list-style-type: none"> Write polynomials in standard form Add, subtract, and multiply polynomials. Factor all types of polynomial expressions. 	<ul style="list-style-type: none"> Teacher Observation Assignments Quizzes Tests Alternative Assessments 	2.1.A2.D
	2	Students will solve linear, quadratic, polynomial, radical, and absolute value equations and inequalities	R	<ul style="list-style-type: none"> Identify different types of equations Solve linear equations in one variable Solve polynomial equations Solve equations involving radicals and absolute values Recognize solutions of linear inequalities Use properties of linear inequalities to solve linear inequalities Solve inequalities using absolute values Solve polynomial and rational inequalities 	<ul style="list-style-type: none"> Teacher Observation Assignments Quizzes Tests Alternative Assessments 	2.8.A2.B 2.8.A2.F
Trigonometry	3	Students will be able to describe an angle and convert between radian and degree measure.	U	<ul style="list-style-type: none"> Describe angles Use radian and degree measure Use angles to model and solve real-life problems 	<ul style="list-style-type: none"> Teacher Observation Assignments Quizzes Tests Alternative Assessments 	
	4	Students will be able to identify a unit circle and its relationship to real numbers.	L	<ul style="list-style-type: none"> Identify a unit circle and its relationship to real numbers. Evaluate trigonometric functions using the unit circle. Use the domain and period to evaluate sine and cosine functions. Use a calculator to evaluate Trigonometric functions. 	<ul style="list-style-type: none"> Teacher Observation Assignments Quizzes Tests Alternative Assessments 	
	5	Students will be able to use right triangles to evaluate trigonometric functions and identities to simplify expressions.	L	<ul style="list-style-type: none"> Evaluate trigonometric functions of acute angles. Use the fundamental trigonometric identities. 	<ul style="list-style-type: none"> Teacher Observation Assignments Quizzes Tests Alternative Assessments 	2.10.A2.A

Unit	Num	Objective	Level	Content	Evaluation	Standard
				<ul style="list-style-type: none"> Use a calculator to evaluate trigonometric functions. Use trigonometric functions to model and solve real-life problems. 		
	6	Students will be able to evaluate trigonometric functions of any angle.	U	<ul style="list-style-type: none"> Evaluate trigonometric functions of any angle. Use reference angles to evaluate trigonometric functions. Evaluate trigonometric functions of real numbers 	<ul style="list-style-type: none"> Teacher Observation Assignments Quizzes Tests Alternative Assessments 	
	7	Students will be able to sketch the graphs of the sine and cosine functions and translate the graphs of sine and cosine functions	L	<ul style="list-style-type: none"> Use the amplitude and period to sketch the graphs of sine and cosine functions. Sketch translations of graphs of sine and cosine functions. Use sine and cosine functions to model real-life data. 	<ul style="list-style-type: none"> Teacher Observation Assignments Quizzes Tests Alternative Assessments 	2.10.A2.B
	8	Students will be able to sketch of the graphs of the remaining trigonometric functions.	L	<ul style="list-style-type: none"> Sketch the graphs of tangent and cotangent functions. Sketch the graphs of secant and cosecant functions. 	<ul style="list-style-type: none"> Teacher Observation Assignments Quizzes Tests Alternative Assessments 	
	9	Students will be able to evaluate the inverse trigonometric functions.	L	<ul style="list-style-type: none"> Evaluate the inverse sine function and all the other inverse trigonometric functions. Evaluate the compositions of trigonometric functions. 	<ul style="list-style-type: none"> Teacher Observation Assignments Quizzes Tests Alternative Assessments 	2.10.A2.B
	10	Students will be able to use fundamental trigonometric identities to evaluate trigonometric functions and simplify trigonometric expressions.	L	<ul style="list-style-type: none"> Recognize and write fundamental trigonometric identities. Use the fundamental trigonometric identities to evaluate trigonometric functions, simplify trigonometric expressions, and rewrite trigonometric expressions. 	<ul style="list-style-type: none"> Teacher Observation Assignments Quizzes Tests Alternative Assessments 	
	11	Students will be able to verify trigonometric identities.	L	<ul style="list-style-type: none"> Plan a strategy for verifying trigonometric identities. Verify trigonometric identities. 	<ul style="list-style-type: none"> Teacher Observation Assignments Quizzes Tests Alternative Assessments 	

Unit	Num	Objective	Level	Content	Evaluation	Standard
	12	Students will be able to use standard algebraic techniques and inverse trigonometric functions to solve trigonometric equations.	L	<ul style="list-style-type: none"> • Use standard algebraic techniques to solve trigonometric equations. • Solve trigonometric equations of quadratic type. • Solve trigonometric equations involving multiple angles. • Use inverse trigonometric functions to solve trigonometric equations. 	<ul style="list-style-type: none"> • Teacher Observation • Assignments • Quizzes • Tests • Alternative Assessments 	
	13	Students will be able to use sum and difference formulas, multiple-angle formulas, power-reducing formulas, half-angle formulas, and product - to- sum formulas to rewrite and evaluate trigonometric functions.	L	<ul style="list-style-type: none"> • Use sum and difference formulas to evaluate trigonometric functions. • Use sum and difference formulas to verify identities and solve trigonometric equations. • Use multiple-angle formulas to rewrite and evaluate trigonometric functions. • Use power-reducing formulas to rewrite and evaluate trigonometric functions. • Use half-angle formulas to rewrite and evaluate trigonometric functions. • Use product-to-sum formulas to rewrite and evaluate trigonometric functions. 	<ul style="list-style-type: none"> • Teacher Observation • Assignments • Quizzes • Tests • Alternative Assessments 	
	14	Students will be able to use the Law of Sines and the Law of Cosines to solve oblique triangles.	U	<ul style="list-style-type: none"> • Use the Law of Sines and Law of Cosines to solve oblique triangles. • Use the Law of Sines and the Law of Cosines to model and solve real-life problems. 	<ul style="list-style-type: none"> • Teacher Observation • Assignments • Quizzes • Tests • Alternative Assessments 	
	15	Students will be able to find areas of oblique triangles.	L	<ul style="list-style-type: none"> • Use Law of Sines and Heron's area Formula to find area of triangles. 	<ul style="list-style-type: none"> • Teacher Observation • Assignments • Quizzes • Tests • Alternative Assessments 	