

# COURSE INFORMATION FORM

Publish in college catalog?

Yes ☒ No ☐

Course Title Precalculus II: Trigonometry

Department/Course Number MATH& 142

Effective Quarter Summer 2016

Credits 5 Variable No ☒ Yes ☐ \_\_\_\_\_ - \_\_\_\_\_

Administrative Unit Code: GM  
Department: Mathematics

Multiple Versions No ☒ Yes ☐ \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

Maximum Class Size 36

## Long Course Description (for college catalog):

(Q,NS) A college level trigonometry course. The second course in a two-course sequence for students who intend to take calculus beginning with MATH& 151. Right triangle trigonometry and applications; general angle and real number trigonometry and applications; identities, inverses and trigonometric equations; introduction to polar coordinates and parametric equations; vectors and applications.

## Short Course Description (for class schedule): **NOTE: Maximum of 240 characters**

(Q,NS) A college level trigonometry course. The second course in a two course sequence for students who intend to take calculus beginning with MATH& 151.

### Prerequisites:

MATH& 141 (or equivalent) with a grade of C or higher  
OR placement in MATH& 142 via an assessment  
OR permission of a math instructor.

Pass/Fail Option Available? Yes ☐ No ☒

Course Challenge Exam Available? Yes ☒ No ☐

Can course be repeated for credit? Yes ☐ No ☒

Co-requisites: None

Number of repeats beyond initial enrollment: One ☐ Two ☐

### Course Intent (check all that apply):

☒ DTA Distribution/Skill

Area Quantitative Skills/ Nat Sci – Part C

☐ DTA Elective (check one only)

☐ University Transfer List (A)

☐ Restricted Transfer (B/Gray area)

☐ Not allowable as an elective for DTA

☐ Fills requirement for \_\_\_\_\_  
(certificate/degree)

☐ Other \_\_\_\_\_

### Workload Information:

	Contact Hours		Percent of Load
Lecture	<u>50</u>	÷ 150 =	<u>.333</u>
Laboratory	_____	÷ 200 =	_____
Science Lab	_____	÷ 180 =	_____
Field Supervision	_____	÷ 300 =	_____
Comments			
Total			<u>.333</u>

### Student Learning Objectives: (Attach additional pages as needed)

Upon successful completion of this course, students will be able to:

1. Use trigonometric ratios and the Pythagorean Theorem to solve right triangles and right triangle applications.
2. State from memory the trigonometric functions of special angles in radians and degrees.
3. State from memory the fundamental trigonometric identities.
4. Evaluate trigonometric expressions involving any angle.
5. Solve applications using the Laws of Sines and Cosines.
6. Evaluate trigonometric functions of real numbers.
7. Analyze and graph trigonometric functions, identifying domains, ranges, amplitudes, periods, phase shifts and asymptotes.
8. Simplify trigonometric expressions and prove trigonometric identities.
9. Evaluate expressions involving inverse trigonometric functions.
10. Solve trigonometric equations for exact and approximate values.
11. Identify and graph common polar equations.
12. Identify and graph common parametrically defined curves.
13. Perform vector addition, subtraction and scalar multiplication in geometric, algebraic and trigonometric forms.
14. Use vector properties to solve applied problems algebraically and trigonometrically.
15. Find vector and scalar projections using the dot product.

Core Learning Outcomes	Introduced (I) or Assessed (A)	If assessed, how is outcome measured?
CLO #1: Engage and take responsibility as active learners	I <input checked="" type="checkbox"/> A <input type="checkbox"/>	
CLO #2: Think critically	I <input type="checkbox"/> A <input checked="" type="checkbox"/>	Critical thinking in the mathematical context is assessed via the program-specific outcome described below.

Program Specific Outcomes	Introduced (I) or Assessed (A)	If assessed, how is outcome measured?
Interpret and manipulate Mathematical language	I <input type="checkbox"/> A <input checked="" type="checkbox"/>	Assessed by evaluating student work using a common rubric on common test items that require students to read a word problem, identify and execute an appropriate solution strategy, using Mathematical language. Each item also requires students to interpret the results in context.
Create, use and analyze graphs	I <input type="checkbox"/> A <input checked="" type="checkbox"/>	Assessed by evaluating student work using a common rubric on common test items that require students to construct and interpret graphs using given information.
Make connections between Mathematical concepts and real world problems	I <input checked="" type="checkbox"/> A <input type="checkbox"/>	