

## MERRITT COLLEGE COURSE OUTLINE

<b>COLLEGE:</b>		<b>STATE APPROVAL DATE:</b>	12/05/2018
<b>ORIGINATOR:</b>	Daniel Lawson	<b>STATE CONTROL NUMBER:</b>	CCC00036 0351
		<b>BOARD OF TRUSTEES APPROVAL DATE:</b>	11/13/2018
		<b>CURRICULUM COMMITTEE APPROVAL DATE:</b>	03/28/2018
		<b>CURRENT EFFECTIVE DATE:</b>	08/01/2019

### DIVISION/DEPARTMENT:

#### 1. REQUESTED CREDIT CLASSIFICATION:

Credit - Degree Applicable  
Course is not a basic skills course.  
Program Applicable

#### 2. DEPT/COURSE NO:

MATH 050

#### 3. COURSE TITLE:

Trigonometry

#### 4. COURSE: MC Course Changes in Catalog Info

**TOP NO.** 1701.00

#### 5. UNITS: 3.000

**HRS/WK LEC:** 3.00 **Total:** 52.50

**HRS/WK LAB:**

#### 6. NO. OF TIMES OFFERED AS SELETED TOPIC:      AVERAGE ENROLLMENT:

#### 7. JUSTIFICATION FOR COURSE:

Prerequisite for all calculus courses offered. Essential to the understanding and description of oscillating phenomena in science, medicine, music, business and physics. Essential surveying, and navigation.

#### 8. COURSE/CATALOG DESCRIPTION

Introduction to functional trigonometry: Basic definitions, identities, graphs, inverse functions, trigonometric equations and applications, solution of triangles and applications, polar coordinates, complex numbers, and De Moivre's Theorem.

#### 9. OTHER CATALOG INFORMATION

- a. Modular: No    If yes, how many modules:
- b. Open entry/open exit: No
- c. Grading Policy: Letter Grade Only
- d. Eligible for credit by Exam: No
- e. Repeatable according to state guidelines: No
- f. Required for degree/certificate (specify):  
    Liberal Arts: CSU GE-Breadth
- g. Meets GE/Transfer requirements (specify):  
    AA/AS GE area 4b CSU GE-Breadth area B4
- h. C-ID Number: Expiration Date:

i. Are there prerequisites/corequisites/recommended preparation for this course? Yes

    Date of last prereq/coreq validation: 12/12/2017

j. Acceptable for Credit: CSU/UC

#### 10. LIST STUDENT PERFORMANCE OBJECTIVES (EXIT SKILLS): (Objectives must define the exit skills required of students and include criteria identified in Items 12, 14, and 15 - critical thinking, essay writing, problem solving, written/verbal communications, computational skills, working with others, workplace needs, SCANS competencies, all aspects of the industry, etc.)(See SCANS/All Aspects of Industry

Worksheet.)

Students will be able to:

1. Demonstrate understanding of the six trigonometry functions, their inverses, and the graphs of these functions
2. Demonstrate competency in problem solving and present solutions in a well written form
3. Provide identities and solve equations utilizing critical thinking

**11A. COURSE CONTENT:** List major topics to be covered. This section must be more than listing chapter headings from a textbook. Outline the course content, including essential topics, major subdivisions, and supporting details. It should include enough information so that a faculty member from any institution will have a clear understanding of the material taught in the course and the approximate length of time devoted to each. There should be congruence among the catalog description, lecture and/or lab content, student performance objectives, and the student learning outcomes. List percent of time spent on each topic; ensure percentages total 100%.

**LECTURE CONTENT:**

1. The six trigonometry functions. (Introduction either by right triangle, or unit circle) 25%
2. Graphs of the six trigonometry functions, with domain and range. 15%
3. Inverse functions, and their graphs. (Use of tables and calculators) 10%
4. Solution of triangles, Law of Sines and Law of Cosines. 20%
5. Identities 10%
6. Conditional Equations 15%
7. Polar Coordinates; Complex Numbers 5%

**11B. LAB CONTENT:**

n/a

**12. METHODS OF INSTRUCTION** (List methods used to present course content.)

1. Discussion
2. Lecture

**13. ASSIGNMENTS:** 0.00 hours/week (List all assignments, including library assignments. Requires two (2) hours of independent work outside of class for each unit/weekly lecture hour. Outside assignments are not required for lab-only courses, although they can be given.)

Out-of-class Assignments:

- 1) Daily assignments from problem sets in text.
- 2) Regular formal written assignments (word problems) with stress on clarity of presentation, legibility and organization
- 3) Exams and comprehensive final exam.

ASSIGNMENTS ARE: (See definition of college level):

Primarily College Level

**14. STUDENT ASSESSMENT:** (Grades are based on):

ESSAY (Includes "blue book" exams and any written assignment of sufficient length and complexity to require students to select and organize ideas, to explain and support the ideas, and to demonstrate critical thinking skills.)

COMPUTATION SKILLS

NON-COMPUTATIONAL PROBLEM SOLVING (Critical thinking should be demonstrated by solving unfamiliar problems via various strategies.)

SKILL DEMONSTRATION

MULTIPLE CHOICE

ESSAY (Includes "blue book" exams and any written assignment of sufficient length and complexity to require students to select and organize ideas, to explain and support the ideas, and to demonstrate critical thinking skills.)

**15. TEXTS, READINGS, AND MATERIALS**

A. Textbooks:

Lial, Margaret. 2017. *Trigonometry* 11th. Pearson

McKeague, Charles. 2017. *Trigonometry* 8th. Cengage Learning

Sullivan, Michael. 2016. *Trigonometry* 10th. Pearson

\*Date is required: Transfer institutions require current publication date(s) within 5 years of outline addition/update.

B. Additional Resources:

Library/LRC Materials and Services:

The instructor, in consultation with a librarian, has reviewed the materials and services of the College Library/LRC in the subject areas related to the proposed new course

Are print materials adequate? No

Are nonprint materials adequate? No

Are electronic/online resources available? No

Are services adequate? No

Specific materials and/or services needed have been identified and discussed. Librarian comments:

C. Readings listed in A and B above are: (See definition of college level):

Primarily college level

**16. DESIGNATE OCCUPATIONAL CODE:**

E - Non-Occupational

**17. LEVEL BELOW TRANSFER:**

Y - Not Applicable

**18. CALIFORNIA CLASSIFICATION CODE:**

Y - Credit Course

**19. NON CREDIT COURSE CATEGORY:**

Y - Not Applicable

**20. FUNDING AGENCY CATEGORY:**

Not Applicable - Not Applicable

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**SUPPLEMENTAL PAGE**

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Use only if additional space is needed. (Type the item number which is to be continued, followed by "continued."

Show the page number in the blank at the bottom of the page. If the item being continued is on page 2 of the outline, the first supplemental page will be "2a." If additional supplemental pages are required for page 2, they are to be numbered as 2b, 2c, etc.)

1a. Prerequisites/Corequisites/Recommended Preparation:

**PREREQUISITE:**

- MATH 203: Intermediate Algebra
- or

**PREREQUISITE:**

- MATH 211D: Intermediate Algebra (Lab)
- or

**PREREQUISITE:**

- MATH 230: Elementary and Intermediate Algebra for Business or STEM majors

**RECOMMENDED PREPARATION:**

- MATH 202: Geometry

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**STUDENT LEARNING OUTCOMES**

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1. **Outcome:** Convert between decimal degrees, degree-minute-seconds, and radian measure of an angle  
*This outcome maps to the following Institution Outcomes:*
  - Quantitive Reasoning - Apply college-level mathematical reasoning to analyze and explain real world issues and to interpret and construct graphs, charts, and tables.**Assessment:** other (describe below): Quizzes and/or tests Final comprehensive examination
  
2. **Outcome:** Evaluate the 6 trigonometric functions using a calculator, as well as determining exact values for some special angles without a calculator.  
*This outcome maps to the following Institution Outcomes:*
  - Quantitive Reasoning - Apply college-level mathematical reasoning to analyze and explain real world issues and to interpret and construct graphs, charts, and tables.**Assessment:** other (describe below): Quizzes and/or tests Final comprehensive examination
  
3. **Outcome:** Solve a triangle (right, acute, obtuse), given various angles and sides.  
*This outcome maps to the following Institution Outcomes:*
  - Quantitive Reasoning - Apply college-level mathematical reasoning to analyze and explain real world issues and to interpret and construct graphs, charts, and tables.**Assessment:** other (describe below): Quizzes and/or tests Final comprehensive examination
  
4. **Outcome:** Demonstrate knowledge of several trigonometric identities and use them to verify other identities.  
*This outcome maps to the following Institution Outcomes:*
  - Quantitive Reasoning - Apply college-level mathematical reasoning to analyze and explain real world issues and to interpret and construct graphs, charts, and tables.**Assessment:** other (describe below): Quizzes and/or tests Final comprehensive examination
  
5. **Outcome:** Graph trigonometric functions.  
*This outcome maps to the following Institution Outcomes:*
  - Quantitive Reasoning - Apply college-level mathematical reasoning to analyze and explain real world issues and to interpret and construct graphs, charts, and tables.**Assessment:** other (describe below): Quizzes and/or tests Final comprehensive examination
  
6. **Outcome:** Solve trigonometric equations.  
*This outcome maps to the following Institution Outcomes:*
  - Quantitive Reasoning - Apply college-level mathematical reasoning to analyze and explain real world issues and to interpret and construct graphs, charts, and tables.**Assessment:** other (describe below): Quizzes and/or tests Final comprehensive examination

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