

San Diego Community College District  
Mesa College  
Course Syllabus, Fall 2018

**Subject Area and Course Number:** Mathematics 104

**Course Title:** Trigonometry

**Class Meets:** Tuesday, Thursday 5:30 PM - 6:55 PM, room MS320

**Instructor:** Russell La Puma

**Voice mail:** (619) 388-2767 x5503

**Web:** <http://homework.sdmesa.edu/rlapuma>

**MyMathLab Course ID:** lapuma10922

**Units:** 3.0

**CRN:** 06401

**Office:** MS222E

**Office Hours:** TuTh 1:30 PM - 2:30 PM

**E-mail:** lapumath@gmail.com

**Prerequisite:** Math 96 with a grade of “C” or better, or equivalent, or Assessment Skill Level M50.

**Course Description:** This course is a study of the numerical, analytical, and geometric properties of right and oblique triangles, of trigonometric and inverse trigonometric functions, and their applications. The course content includes right angle trigonometry, radian measure, circular functions, graphs of circular functions and their inverses, trigonometric identities, equations involving trigonometric and inverse trigonometric functions, an introduction of the complex plane, vectors and their operations, and the trigonometric form of complex numbers. This course is designed as a preparation for calculus and it is intended for the transfer student planning to major in mathematics, engineering, economics, or disciplines included in the physical or life sciences. This course meets CSU general education requirements.

**Student Learning Objectives:**

Upon successful completion of the course the student will be able to:

1. Recognize and construct angles whose measures are given in degrees or radians, convert between radians and degrees, determine reference angles, and apply angle measurement to problems.
2. Define trigonometric functions in terms of the lengths of the sides of right triangles, and apply to problems involving right triangles.
3. Evaluate trigonometric functions of special angles by utilizing geometric properties of triangles.
4. Define and evaluate trigonometric functions as circular functions.
5. Analyze and describe the graphs of trigonometric functions and their algebraic representation in terms of their properties including the phase shift, the period, vertical shifts, the amplitude, asymptotes, and the domain and range.
6. Define, evaluate, describe, and graph inverse trigonometric functions including their domains and ranges.
7. Derive and prove fundamental trigonometric identities including the Pythagorean identities, the reciprocal identities, the sum and difference identities, and apply these to derive more general identities.
8. Solve trigonometric and inverse trigonometric equations.
9. Apply the Pythagorean Theorem, the law of sines, and the law of cosines to solve right and oblique triangles, and application problems.
10. Apply the definitions of trigonometric functions to describe vector quantities in terms of their components, and in terms of their magnitude and direction.
11. Apply vector algebra to problems involving vector quantities such as force, velocity and displacement.
12. Perform arithmetic operations on complex numbers using both standard and trigonometric form including applications involving De Moivre's Theorem, and interpret those operations geometrically.

**Course Learning Outcomes:** The student will be able to demonstrate knowledge of the interrelatedness of concepts for graphing the sinusoidal functions, including the amplitude, period, horizontal and vertical translations, and horizontal stretching and shrinking.

The student will be able to apply the Law of Sines or Cosines appropriately to solve a triangle problem.

**Evaluation:** There will be three tests and a final examination. To avoid the need for make-up tests, the score of any missed test will be dropped and the final and remaining tests given extra weight. There will be no make-up tests or quizzes. There will be short quizzes tentatively scheduled for every second class meeting, with the lowest two quiz scores dropped. Homework will be done either on line using MyMathLab, or from the textbook. The final grade will be determined as 90-100% A, 80-89% B, 70-79% C, 60-69% D, with the following weights in effect:

Homework	10%	
Quizzes	10%	
Tests, best two @	24%	each
Test, worst	8%	
Final	24%	

**Text and Supplies:** *Trigonometry*, 4rd edition, Mark Dugopolski; ISBN 0-321-92348-0.  
MyMathLab student access kit.

A scientific calculator, capable of evaluating trigonometric functions is required for the course. A graphing calculator (e.g. a TI-84) is recommended, but its use may be restricted on quizzes and tests.

**Attendance Requirements:** A student accumulating unexcused absences of more than 6% of the total hours that the class meets (equal to two class meetings) may be dropped by the instructor. If there are unexcused absences of more than 12% (four class meetings), or missed tests, the student *will* be dropped. The withdrawal deadline is **October 26**. Any student still enrolled in the course after that date cannot receive a "W." It is the student's responsibility to add, drop, or withdraw from classes before the deadlines stated in the class schedule.

**Tardiness:** Class begins at the set hour. While tardiness is unavoidable on rare occasions, chronic tardiness disrupts the learning environment. Likewise, it is usually inappropriate to leave before the end of class without consulting the instructor. If the instructor is more than twenty minutes late, students may leave after signing an attendance sheet.

**Classroom Behavior and Student Code of Conduct:** Students are expected to respect and obey standards of student conduct while in class and on campus. The student Code of Conduct, disciplinary procedure, and student due process (Policy 3100, 3100.1, and 3100.2) can be found in the current college catalog. Under most circumstances, food, beverages, and phones are unnecessary in the classroom. Turn phones off.

**Collaboration and Cheating:** You are encouraged to work with tutors or other students on homework and class topics, provided you share learning, not just answers. (Consider attending the MT2C Math & Science Tutoring, LRC 4th floor.) Collaboration on exams or quizzes, however, is regarded as cheating and will result in a zero for that exam.

**Accommodation of Disability:** Students with disabilities who may need academic accommodations should discuss options with their professors during the first two weeks of class.

Math 104 – La Puma – Fall 2018			
week	Tue		Thu
1	Aug 21	introduction prerequisites	Aug 23      1.1 1.2
2	Aug 28	1.3 1.4	Aug 30      1.5
3	Sep 4	1.5 1.6	Sep 6      1.6 2.1
4	Sep 11	2.1 2.2	Sep 13      2.2 2.3
5	Sep 18	2.4 2.5	Sep 20 <b>Test 1</b>
6	Sep 25	2.5 3.1	Sep 27      3.1 3.2
7	Oct 2	3.2 3.3	Oct 4      3.3 3.4
8	Oct 9	3.4 3.5	Oct 11      3.6 4.1
9	Oct 16	4.1 4.2	Oct 18      catch up review
10	Oct 23	<b>Test 2</b>	Oct 25      4.2, 4.3 <i>Withdrawal deadline 10/26</i>
11	Oct 30	4.3 4.4	Nov 1      4.4 5.1
12	Nov 6	5.1 5.2	Nov 8      5.3 5.4
13	Nov 13	5.4 5.5	Nov 15      6.1 6.2
break	Nov 20	<i>break</i>	Nov 22 <i>break</i>
14	Nov 27	6.2 6.3	Nov 29 <b>Test 3</b>
15	Dec 4	6.3	Dec 6      catch up
16	Dec 11	review	Dec 13 <b>Final</b>

*Schedule subject to change with prior notice.*