

**PALOMAR COLLEGE**  
**COURSE OUTLINE OF RECORD FOR**  
**DEGREE CREDIT COURSE**

Transfer course     A.A. degree applicable course

**COURSE NUMBER AND TITLE:** Math 115 - Trigonometry

**UNIT VALUE:** 3

**MINIMUM NUMBER OF SEMESTER HOURS:** 48

**BASIC SKILLS REQUIREMENTS:** Appropriate language and computational skills.

**ENTRANCE REQUIREMENTS:**

**PREREQUISITE:** A minimum grade of "C" in Math 60 or Math 56 or eligibility determined through the math placement process.

**COREQUISITE:** None

**RECOMMENDED PREPARATION:** None

**SCOPE OF COURSE:** The trigonometric functions and their applications, including emphasis on the analytical aspects, identities, and trigonometric equations.

**SPECIFIC COURSE OBJECTIVES:** The successful student will be able to:

1. Analyze trigonometric functions and equations geometrically, numerically, graphically, and analytically.
2. Explain and synthesize trigonometric concepts.
3. Analyze, solve and interpret solutions to trigonometric equations.
4. Interpret and apply graphic, numeric and analytic representations of complex numbers in trigonometric form.
5. Apply trigonometric functions to application problems and interpret results in context.

**CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:** At least the following topics will be covered:

1. The trigonometric functions, including functions of any angle expressed in degrees or radians and circular functions.
2. Graphs of the trigonometric functions, including vertical and horizontal translations and transformations.
3. Applications of the trigonometric functions to right and oblique triangles including law of sines, law of cosines, ambiguous cases, area and vectors.
4. Trigonometric identities, including fundamental identities, sum and difference of angles, double and half angles, and applications.
5. Trigonometric equations and inverse functions and applications.
6. Complex numbers including graphing complex numbers, fundamental operations, trigonometric form, DeMoivre's Theorem and applications.
7. The polar coordinates system, including graphs of polar equations.
8. Parametric equations and their applications.
9. Additional topics may be included at instructor's discretion.

**REQUIRED READING:**

Aufmann, Richard N., Vernon C. Barker, and Richard D. Nation. Trigonometry. 3<sup>rd</sup> Edition. Boston: Houghton Mifflin Company, 1997. 1-278, 318-348.

OR

Larson, Roland E., and Robert P. Hostetler, and Bruce H. Edwards. Trigonometry: A Graphing Approach with Technology Updates. Boston: Houghton Mifflin Company, 1997. 1-286, 321-352, 417-425, 461-486.

**SUGGESTED READING:** None

**REQUIRED WRITING:** Trigonometric problem-solving exercises on homework assignments and written tests are more appropriate. In addition, students may be required to write reports from one paragraph to several pages explaining concepts or explaining and interpreting solutions to non-routine or applied problems.

**OUTSIDE ASSIGNMENTS:**

**Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for short term classes.**

Students are expected to read the text, study lecture notes, and complete daily homework assignments. Homework assignments may include practice solving routine problems, explaining concepts, and solving application or non-routine problems. Other outside assignments may include computer laboratory assignments, problem-solving reports or the reading of articles from scientific periodicals.

**INSTRUCTIONAL METHODOLOGY:**

**Check all that apply:**

- lecture
- laboratory
- lecture-laboratory combination
- directed study

**This course may be offered as a distance education course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.**

Yes  No

**If yes, check all that apply.** (See guidelines for preparation for definitions.)

- telecourse
- mediated instruction
- computer assisted instruction

**GRADING POLICY AND STANDARDS** (include methods of determining whether the stated objectives have been met by students):

Computation of semester grade may include the following methods of evaluation: In-class exams, take-home exams, computer lab assignments, homework assignments, essays or other evaluation methods. A comprehensive final exam (in class) is required. For example, the semester grade may be computed as follows:

Written exams	40 - 80%
Comprehensive final	20 - 40%
Homework or other outside assignments	0 - 20%

**IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?**

Yes  No  Number of times course may be taken for credit: 1

If yes, identify specific provision of Title 5 Division 2 section(s) 55761-55763 and 58161 which qualifies course as repeatable:

**CONTACT PERSON:** Dan Clegg    **EXTENSION:** 2847

SIGNATURES ON FILE