

Columbus State Community College
Mathematics Department Syllabus

Course and Number: MATH 1149 – Trigonometry **Credits:** 4 **Class Hours Per Week:** 4
Prerequisites: Math 1148 or Math 1146 with a C or higher, or by placement

COURSE DESCRIPTION: This course is a study of the trigonometric functions, vectors, and related applications. Topics include right triangle trigonometry; trigonometry of general angles; the unit circle; the graphs of the trigonometric functions; analytical trigonometry; inverse trigonometric functions; verifying identities; solving trigonometric equations; the Law of Sines; the Law of Cosines; applications of trigonometry; polar coordinates and the graphs of polar equations; geometric and algebraic vectors; vector applications; plane curves and parametric equations, trigonometric form of complex numbers, and DeMoivre's Theorem. The conic sections are defined and analyzed algebraically and graphically.

COURSE GOALS: To provide the final preparation for a student planning to begin a study of calculus. To promote further development in the student's ability to think and to reason mathematically.

INSTITUTIONAL LEARNING GOALS: Critical Thinking and Quantitative Skills

TEXTBOOK, MANUALS, REFERENCES, AND OTHER REQUIRED MATERIALS:

- *Algebra and Trigonometry, Enhanced with Graphing Utilities*, 8th Ed, Sullivan/Sullivan, Prentice Hall
- My Math Lab/Course Compass – (included with purchase of a new text)
- The Texas Instruments' TI-84 (regular, Plus, Silver, etc.) graphing calculator is recommended.
 - *Calculator Alternatives:* Some students may prefer to use a CASIO-FX-9750GII, TI- Nspire (non-CAS version), or a TI-83. These options are similar to the TI-84 and are approved for use during proctored assessments.
 - Other graphing calculators may be permitted. If you own a different calculator, please check with your current instructor to see if your calculator will be allowed during their proctored assessments.
 - The TI-89, TI-92, TI-Nspire CAS, or other Computer Algebra System (CAS) calculators, are never allowed during proctored assessments.

UNITS OF INSTRUCTION:

- Trigonometric Functions (Chapters 7.1-7.8)
- Analytic Trigonometry (Chapter 8.1-8.6)
- Applications of Trigonometry: Laws of Sines and Cosines, Vectors (Chapters 9.1-9.3, 10.4-10.5)
- Polar Coordinates (Chapters 10.1-10.2)
- Complex Numbers (Chapters 10.3)
- Conic Sections (Chapters 2.4, 11.1-11.4, 11.6)
- Parametric Equations (Chapters 11.7)

GENERAL INSTRUCTIONAL METHODS: Instructional methods may include face-to-face or video lectures or demonstration, face-to-face or virtual discussion, individual or group activities including the use of visual aids, graphing calculators, computers and/or other technologies. Students may be expected to participate in these activities during class and/or outside of class. Instructors may require class participation, collaborative learning, and peer review.

STANDARDS AND METHODS FOR EVALUATION: The departmental final exam will be 25% of the course grade. The remaining 75% of the course grade will be determined by the instructor. No more than 25% of the course grade may be determined using non-proctored assessments.

GRADING SCALE:

Letter grades for the course will be awarded using a 90% - 80% - 70% - 60% scale.

Grades will not be curved, skewed, or otherwise inflated.