Grading  The grade for this course will be determined using three tests and a final exam. The test dates are given in the schedule below. Each test is worth 1/3 of the grade subject to the outcome of the final exam. The grades for each of the three tests will be supplemented by bonus points obtained from homework and quizzes during the respective test periods.

The final exam will affect your grade in the following way: if you score less than 60% on the final, your quiz average will be reduced by a letter grade. If you score a 90% or above on the final, your grade will improve by a letter grade.

Homework  You will be assigned homework every class period. The next class, the homework will generally be collected or a quiz covering that assignment will be given. Your homework/quiz average will be used as bonus points for the tests.

Attendance  Regular class attendance is expected. There will be no make-up for missed homework, so a missed day may result in a zero.

Calculators  Calculators may be allowed for the tests depending on the material covered.

Course Outline  The following is a tentative outline of the material to be covered. *I reserve the right to change the material and/or sequence.*

Topics by Week

1) Functions and Graphs  
2) Functions and Graphs  
3) One to One and Onto Functions, Transformations  
4) Angles, Trigonometric Functions  
5) Basic Properties of Trigonometric Functions, **Test 1 (2.15)**  
6) Properties of Trigonometric Functions  
7) Inverse Trigonometric Functions
8) More Trigonometric Identities
9) Right Triangle Trigonometry and Applications, Test 2 (3.22)
10) Applications
11) Applications
12) Polar Equations
13) Vectors
14) Analytic Geometry, Test 3 (4.26)
15) Review
16) Final Exam (May 8th: 8:00-10:00)

General University Policies

Student Disability Services

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA), and subsequent legislation. The Office of Student Affairs is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability, and it is the student’s responsibility to initiate such a request by contacting:

Dallas Swafford
Director of Student Disability Services
Office of Student Affairs
325-942-2047
dallas.swafford@angelo.edu

Title IX

Angelo State University is committed to the safety and security of all students. If you or someone you know experience sexual harassment, sexual assault, domestic or dating violence, stalking, or discrimination, you may contact ASU’s Title IX Coordinator:

Michelle Boone
Director of Title IX Compliance
325-486-6357
michelle.boone@angelo.edu

Student Absence for Observance of Religious Holy Days:
A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. (http://www.angelo.edu/opmanual/ -- OP 10.19)
Incomplete Grade Policy:
It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 Grading Procedures for more information.

Student Conduct Policies

Academic Integrity
Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU. The College of Science and Engineering adheres to the Statement of Academic Integrity

Plagiarism
Plagiarism is a serious topic covered in ASU’s Academic Integrity policy in the Student Handbook. Plagiarism is the action or practice of taking someone else’s work, idea, etc., and passing it off as one’s own. Plagiarism is literary theft. In your discussions and/or your papers, it is unacceptable to copy word-for-word without quotation marks and the source of the quotation. It is expected that you will summarize or paraphrase ideas giving appropriate credit to the source both in the body of your paper and the reference list. Papers are subject to be evaluated for originality via Turnitin. Resources to help you understand this policy better are available at the ASU Writing Center.

Copyright Policy
Students officially enrolled in this course should make only one printed copy of the given articles and/or chapters. You are expressly prohibited from distributing or reproducing any portion of course readings in printed or electronic form without written permission from the copyright holders or publishers.

General Policies Related to this Course:
All students are required to follow the policies and procedures presented in these documents:
Angelo State University Student Handbook
Angelo State University Catalog

Student Learning Outcomes

The students will demonstrate factual knowledge including the mathematical notation and terminology used in this course. Students will read, interpret, and use the vocabulary, symbolism, and basic definitions used in trigonometry including definitions of the six trigonometric functions; types of angle measure and notation; equations of conic sections; representing equations in polar coordinates; and the definition of vectors.
The students will describe the fundamental principles including the laws and theorems arising from the concepts covered in this course. Students will identify and apply the laws and formulas that result directly from the definitions; for example, the fundamental identities, properties of angles and triangles, characteristics of the trigonometric functions, inverse trigonometric functions, polar equations (including graphs), and formulas for converting between polar and rectangular coordinates.

Students will apply course material along with techniques and procedures covered in this course to solve problems. Students will use the facts, formulas, and techniques learned in this course to prove identities and solve trigonometric equations; and solve various types of triangle problems, distance and navigation problems, and linear and angular velocity problems.

The Student will develop specific skills, competencies, and thought processes sufficient to support further study or work in this field or related fields. Students will acquire a level of proficiency in the fundamental concepts and applications necessary for further study in academic areas requiring trigonometry as a prerequisite, or for work in occupational fields requiring a background in trigonometry. These fields might include education, business, finance, marketing, computer science, physical sciences, and engineering, as well as mathematics.

Course Content

Textbook: Trigonometry: A Unit Circle Approach, Tenth Edition, by Sullivan. The following chapters including the particular sections listed are covered. (See textbook “Contents.”)

1) Graphs and Functions. Graphs of Equations in Two Variables; Circles; Functions and Their Graphs; Properties of Functions; Library of Functions; Piecewise-defined Functions; Graphing Techniques: Transformations; One-to-one Functions; Inverse Functions

2) Trigonometric Functions. Angles and Their Measure; Trigonometric Functions: Unit Circle Approach; Properties of the Trigonometric Functions; Graphs of the Sine and Cosine Functions; Graphs of the Tangent, Cotangent, Cosecant, and Secant Functions; Phase Shift; Sinusoidal Curve Fitting

3) Analytic Trigonometry. The Inverse Sine, Cosine, and Tangent Functions; The Inverse Trigonometric Functions (continued); Trigonometric Equations; Trigonometric Identities; Sum and Difference Formulas; Double-angle and Half-angle Formulas; Product-to-Sum and Sum-to-Product Formulas

4) Applications of Trigonometric Functions. Right Triangle Trigonometry; Applications; Law of Sines; Law of Cosines; Area of a Triangle
5) Polar Coordinates; Vectors. Polar Coordinates; Polar Equations and Graphs; Vectors; The Dot Product; Vectors in Space; The Cross Product

6) Analytic Geometry. The Parabola; The Ellipse; The Hyperbola; Polar Equations of Conics; Plane Curves and Parametric Equations