

MATH 1316 STEM
Plane Trigonometry

Western Texas College

- I. Basic Course Information
 - A. MATH 1316 Course Description: This course is an In-depth study and application of trigonometry including definitions, identities, inverse functions, solutions of equations, graphing, and solving triangles. Additional topics such as vectors, polar coordinates and parametric equations may be included.
 - B. Any required prerequisites: Students must make a C or better in MATH 1314 (College Algebra) or have the appropriate entrance exam score.
 - C. Required Grade for Enrolling in the Next Course in this Sequence: A grade of C in this course is required to advance to MATH 2313 or 2413.
 - D. Advancement Via Individual Determination (AVID) learning strategies will be implemented periodically throughout the course.
 - E. This course has been designed to prepare students whose chosen field of study requires a STEM mathematical pathway.
 - F. Project Base Learning (PBL) is an active learning method in which students gain knowledge and skill by investigating and responding to a tangible, engaging and complex question, problem or challenge.
 - G. Online course content is administered through the college's learning management system (LMS), Moodle, also called eCampus. A link to eCampus can be found on mywtc.edu and to Moodle (the big M with a graduation cap) on the college's home page, www.wtc.edu.
- II. Student Learning Outcomes
 - A. Compute the values of trigonometric functions for key angles in all quadrants of the unit circle measured in both degrees and radians.
 - B. Graph trigonometric functions and their transformations.
 - C. Prove trigonometric identities.
 - D. Solve trigonometric equations.
 - E. Solve right and oblique triangles.
 - F. Use the concepts of trigonometry to solve applications.
- III. Course Requirements
 - A. Major Requirements—All major requirements must be proctored.
 - 1. In-Class Participation
 - 2. Unit Exams
 - 3. Midterm Exam
 - 4. Final Exam
 - B. Minor Requirements
 - 1. Binder Checks
 - 2. Homework
 - 3. Quizzes
 - 4. Projects

- IV. Testing Requirements
 - A. Students are NOT allowed to use their book or notes of any kind while completing major requirements.
- V. Information on Books and Other Course Materials
 - A. Required Book: Trigonometry, 11th edition, by Lial, Hornsby, and Schneider. Book ISBN: 978013431533
 - B. Required Access Code: Online Students must purchase a MyMathLab Access Code. This code can be purchased stand alone or bundled with the textbook.
 - 1. Book bundled with MyMathLab ISBN: 9780134306025
 - C. Calculators: Students must have a calculator that provides them with the In (natural log) function key. A TI-84 or higher is strongly recommended. The TI-89, TI-Inspire with CAS or any other calculator with CAS capability are not permitted.
- VI. Other Policies, Procedures and important dates. Please refer to the [Western Texas College Catalog](#) for the following:
 - A. Campus Calendar
 - B. Final exam schedule
 - C. How to drop a class
 - D. Withdrawal information
 - E. Student Conduct/Academic Integrity
 - F. Class Attendance
 - G. Students with disabilities
- VII. Planned Course of Study

Chapters and Sections to be covered throughout the semester	
Chapter 1— Trigonometric Functions	1.1 Angles
	1.2 Angle Relationships and Similar Triangles
	1.3 Trigonometric Functions
	1.4 Using the Definitions of the Trigonometric Functions
Chapter 2— Acute Angles and Right Triangles	2.1 Trigonometric Functions of Acute Angles
	2.2 Trigonometric Functions of Non-Acute Angles
	2.3 Finding Trigonometric Function Values
	2.4 Solutions and Applications of Right Triangles
	2.5 Further Applications of Right Triangles
Chapter 3— Radian Measure and the Unit Circle	3.1 Radian Measure
	3.2 Applications of Radian Measure
	3.3 The Unit Circle and Circular Functions
	3.4 Linear and Angular Speed
Chapter 4— Graphs of the Circular Functions	4.1 Graphs of the Sine and Cosine Functions
	4.2 Translations of the Graphs of the Sine and Cosine Functions
	4.3 Graphs of Tangent and Cotangent Functions
	4.4 Graphs of Secant and Cosecant Functions

Chapter 5— Trigonometric Identities	5.1 5.2 5.3 5.4 5.5 5.6	Fundamental Identities Verifying Trigonometric Identities Sum and Difference Identities for Cosine Sum and Difference Identities for Sine and Tangent Double-Angle Identities Half-Angle Identities
Chapter 6— Inverse Circular Functions and Trigonometric Equations	6.1 6.2 6.3 6.4	Inverse Circular Functions Trigonometric Equations I Trigonometric Equations II Equations involving Inverse Trigonometric Functions
Chapter 7— Applications of Trigonometry and Vectors	7.1 7.2 7.3	Oblique Triangles and the Law of Sines The Ambiguous Case of the Law of Sines The Law of Cosines

*This schedule is subject to change at the discretion of the instructor.

Last Modified: August 23, 2019