Midland College Syllabus
2022 - 2023
MATH 1316
Trigonometry
3 Semester Credit Hours
(3 Lecture/0 Lab)
Core Curriculum Course

Instructor Information:

Instructor: Click here to enter text.   Office: Click here to enter text.
Phone: Click here to enter text.   Email: Click here to enter text.
Office Hours: Click here to enter text.

Notice: Students MUST actively participate by completing an academic assignment required by the instructor by the official census date. Students who do not actively participate in an academically-related activity may be reported as never attended and dropped from the course.

Course Description:

This course is designed to enable a student to become proficient in the in-depth study and applications 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. Prerequisite: A C or better in MATH 1314 or a sufficient score on a math placement test.

Core Objectives:

This course fulfills the three-hour Mathematics requirement in the Midland College Core Curriculum. The Core Curriculum is a set of courses that provide students with a foundation of knowledge, skills and educational experiences that are essential for all learning. The Core Curriculum is available in the <u>Midland College Catalog</u> As part of the core, this course addresses the following three objectives:

Critical Thinking Skills – Students will demonstrate critical thinking skills by analyzing and applying characteristics of trigonometric functions in graphing trigonometric functions, proving trigonometric identities, and solving trigonometric equations in course assignments, instructor created exams, and a departmental final exam.

Communication Skills – Students will demonstrate communication skills in written, oral, and visual form within the classroom setting through instructor posed questions, collaborative peer assignments, and exams.

Empirical and Quantitative Skills – Students will demonstrate empirical and quantitative skills by analyzing real-world applications of trigonometric functions and computing trigonometric functional values using triangles, unit

circle, and technology through course assignments, instructor created exams, and a departmental final exam.

Text, References and Supplies:
- Lial, Hornsby, Schneider, and Daniels <u>MyLab Math with Pearson eText-18 week Stand Alone Access Card for Trigonometry,</u> 12/e
  - ○ ISBN: 978-0-135-92413-6
- Computer access required by some instructors.
- Scientific calculator

Student Learning Outcomes

Upon successful completion of this course, students will:
1. Compute the values of trigonometric functions for key angles in all quadrants of the unit circle measured in both degrees and radians.
2. Graph trigonometric functions and their transformations.
3. Prove trigonometric identities.
4. Solve trigonometric equations.
5. Solve right and oblique triangles.
6. Use the concepts of trigonometry to solve applications.

Student Contributions, Responsibilities and Class Policies:

Students will be expected to comply with the policies outlined in the <u>Midland College Catalog</u>. Instructor policies concerning attendance and academic behavior are consistent with the policies in the catalog. Regular attendance is required to do well in this class.

Students will be evaluated based on the results of assessments outlined in the syllabus and Instructor Handout.

Attendance Policy:

It is the responsibility of the students to know the policies and procedures associated with absences. These policies are set by instructors. Excused absences may include, but are not limited to, illness, severe weather, and death in the family. Instructors will determine whether or not an absence is excused. Please visit the <u>Midland College Catalog</u>

Withdrawal Policy:

Students who have enrolled in a Texas public institution of higher education as a first-time freshman in fall 2007 or later are permitted to drop no more than six courses during the entire undergraduate career. This limit includes all transfer work taken at a Texas institution of higher education and to second baccalaureate degrees. This statute was enacted by the State of Texas in spring 2007 (Texas Education Code 51.907). Any course that a student drops after Census Day is counted toward the six-course limit if "(1) the student was able to drop the course without receiving a grade or incurring an academic penalty; (2) the student's transcript indicates or will indicate that the student was enrolled in the course; and (3) the student is not dropping the course in order to withdraw from the institution." Please visit the <u>Midland College Catalog</u>

Scholastic Dishonesty:

Midland College does not tolerate scholastic dishonesty or academic misconduct in any form. Please read the Student Rights & Responsibilities section in the Midland College Catalog for more information.

Evaluation of Students:

Students will be evaluated based on grades which may including the following but are not limited to:

Assessments	Percentage of Grade	Grade Range
Quizzes/Assignments	0-10%	90-100 A
Midterm Exams	65-80%	89-80 B
Final Exam	20-25%	79-70 C
		69-60 D
		59-0 F

Students will be evaluated based on the results of examinations given throughout the semester. Your lecture instructor will inform you on the first day of class as to the tentative dates and content for each exam. Students are expected to complete each exam. Your instructor will inform you on the first day of class as to make-up procedures for missed exams and any exemption procedures if they apply (See Instructor Handout).

Course Schedule:

This class meets for 3 contact hours per week. For a tentative schedule of the class meetings and material to be covered during those meetings, please refer to the schedule distributed to each student on the first class meeting (See Instructor Handout).

Course Outline:

Trigonometric Functions
      1.1   Angles
      1.3   Trigonometric Functions
      1.4   Using the Definitions of the Trigonometric Functions

Acute Angles and Right Triangles
      2.1   Trigonometric Functions of Acute Angles
      2.2   Trigonometric Functions of Non-Acute Angles
      2.3   Approximations of Trigonometric Function Values
      2.4   Solutions and Applications of Right Triangles
      2.5   Further Applications of Right Triangles

Radian Measure and Circular Functions
      3.1   Radian Measure
      3.2   Applications of Radian Measure
      3.3   The Unit Circle and Circular Functions
      3.4   Linear and Angular Speed

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 the Tangent and Cotangent Functions
       4.4   Graphs of the Secant and Cosecant Functions

Trigonometric Identities
       5.1   Fundamental Identities
       5.2   Verifying Trigonometric Identities
       5.3   Sum and Difference Identities for Cosine
       5.4   Sum and Difference Identities for Sine and Tangent
       5.5   Double-Angle Identities
       5.6   Half-Angle Identities

Inverse Circular Functions and Trigonometric Equations
       6.1   Inverse Circular Functions
       6.2   Trigonometric Equations I
       6.3   Trigonometric Equations II
       6.4   Equations Involving Inverse Trigonometric Functions

Applications of Trigonometry and Vectors
       7.1   Oblique Triangles and the Law of Sines
       7.2   The Ambiguous Case of the Law of Sines
       7.3   The Law of Cosines
       7.4   Geometrically Defined Vectors and Applications
       7.5   Algebraically Defined Vectors and the Dot Product

Polar Equations and Parametric Equations
       8.5   Polar Equations and Graphs (Optional, if time permits)
       8.6   Parametric Equations, Graphs, and Applications (Optional, if time permits)

Non-Discrimination Statement:
Midland College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following individual has been designated to handle inquiries regarding the non-discrimination policies:
Tana Baker
Title IX Coordinator/Compliance Officer
3600 N. Garfield, SSC 131
Midland, Texas 79705
(432) 685-4781
tbaker@midland.edu
For further information on notice of non-discrimination, visit the ED.gov Office of Civil Rights website, or call 1 (800) 421-3481.

Americans with Disabilities Act (ADA) Statement:
Midland College provides services for students with disabilities through Student Services. In order to receive accommodations, students must visit www.midland.edu/accommodation and complete the Application for Accommodation Services located under the Apply for Accommodations tab. Services or accommodations are not automatic, each student must apply and be approved to receive them. All documentation submitted will be reviewed and a "Notice of Accommodations" letter will be sent to instructors outlining any reasonable accommodations.

Continuity of Instruction Statement
In the event that on campus activities are suspended due to extenuating circumstances, such as weather or quarantine, the instructor will continue instruction in a manner that best supports the course content and student engagement. In this event, your instructor will notify students of the change via Click here to enter text. At that time, they will provide details about how instruction and communication will continue, how academic integrity will be ensured, and what students may expect during the time that on campus activities are suspended. If a student becomes unable to continue class participation due to extenuating circumstances, (e.g., health and safety, loss of power, etc.) the student should contact their instructor and advisor for guidance. Resources are available to students via the SOS program. Information can be found at https://www.midland.edu/services-resources/student-services/sos.php.

Grievances or complaints
Concerns should be expressed as soon as possible to allow for early resolution. Midland College encourages students to discuss their concerns with their instructor first. If you feel uncomfortable discussing your situation with your instructor, students should discuss their concerns with the Chair of the appropriate department (Biology Chair – Mr. Tomas Hernandez (432-685-6751), Chemistry Chair – Mr. John Anderson (432-685-6737), Engineering and Physics Chair – Dr. Brian Flowers (432-685-4586), Geology Chair – Mr. Antony Giles (432-685-5580), Kinesiology Chair – Ms. Sheena Thompson (432-685-4579), Math Chair – Dr. Krista Cohlmia (432-685-4541) then the Dean of Math and Science – Dr. Miranda Poage (432-685-4561). If a resolution is still not possible, students may proceed with the formal complaint process.
http://catalog.midland.edu/content.php?catoid=14&navoid=2579#grievances-and-complaints

Math & Science Division Information:
Division Office: AHSF 124   (432) 685-4561

Department Chair: Dr. Krista Cohlmia   (432) 685-4541
Dean: Dr. Miranda Poage
Secretary: Sarah Anderson
Clerk: Liliana Orcutt

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