

Midland College Syllabus

2021 - 2022

MATH 2412

Pre-Calculus

4 Semester Credit Hours

(4 Lecture/0 Lab)

Core Curriculum Course

Instructor Information:

Instructor: [Click here to enter text.](#)

Phone: [Click here to enter text.](#)

Office Hours: [Click here to enter text.](#)

Office: [Click here to enter text.](#)

Email: [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 provide students with an in-depth study of algebra, trigonometry, and other topics for calculus readiness. Prerequisite: A C or better in MATH 1314 or the equivalent preparation.

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 [Midland College Catalog](#). 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 algebraic, transcendental, and trigonometric functions 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 algebraic, transcendental, and trigonometric functions through course assignments, instructor created exams, and a departmental final exam.

Text, References and Supplies:

- Dugopolski, Precalculus: Graphics & Models w MML ala, 4th ed.; Pearson.
 - ISBN: 978-0-13-462091-6
- MyMathLab program is required by some instructors.
- Scientific calculator

Student Learning Outcomes

Upon successful completion of this course, students will:

1. Demonstrate and apply knowledge of properties of functions.
2. Recognize and apply algebraic and transcendental functions and solve related equations.
3. Apply graphing techniques to algebraic and transcendental functions.
4. Compute the values of trigonometric functions for key angles in all quadrants of the unit circle measured in both degrees and radians.
5. Prove trigonometric identities.
6. Solve right and oblique triangles.

Student Contributions, Responsibilities and Class Policies:

Students will be expected to comply with the policies outlined in the [Midland College Catalog](#). 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. At least 70% of the course grade will come from proctored assignments.

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 [Midland College Catalog](#)

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 [Midland College Catalog](#)

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:

Exams.....	65-80%	GRADE RANGE
Quizzes/Assignments.....	0-10%	90-100 A
Final Exam.....	20-25%	89-80 B
		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 4 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).

Common Assessment:

All sections of this course have a common assessment. The common assessment for this course is shown in the schedule and is noted as such (see Instructor Handout).

Course Outline:

1. Equations, Inequalities, and Modeling
 - 1.4 Linear Equations in Two Variables
2. Functions and Graphs
 - 2.3 Families of Functions, Transformations, and Symmetry
3. Polynomial and Rational Functions
 - 3.5 Graphs of Polynomial Functions
 - 3.6 Rational Functions and Inequalities
4. Exponential and Logarithmic Functions
 - 4.1 Exponential Functions and Their Applications
 - 4.2 Logarithmic Functions and Their Applications
 - 4.3 Rules of Logarithms
 - 4.4 More Equations and Applications
5. The Trigonometric Functions
 - 5.1 Angles and Their Measurements
 - 5.2 The Sine and Cosine Functions
 - 5.3 The Graphs of the Sine and Cosine Functions
 - 5.4 The Other Trigonometric Functions and Their Graphs
 - 5.5 The Inverse Trigonometric Functions

5.6 Right Triangle Trigonometry

6. Trigonometric Identities and Conditional Equations

6.1 Basic Identities

6.2 Verifying Identities

6.3 Sum and Difference Identities

6.4 Double-Angle and Half-Angle Identities

6.5 Product and Sum Identities

6.6 Conditional Trigonometric Equations

7. Applications of Trigonometry

7.1 The Law of Sines

7.2 The Law of Cosines

7.3 Vectors

7.6 Polar Equations

7.7 Parametric Equations

8. Systems of Equations and Inequalities

8.4 Partial Fractions

10. The Conic Sections

10.1 The Parabola

10.2 The Ellipse and the Circle

10.3 The Hyperbola

11. Supplemental Material

Finding Limits Numerically and Graphically

Finding Limits Algebraically with Limit Theorems

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.

Math & Science Division Information:

Division Office: AHSF 124 (432) 685-4561
Division E-Mail: mns@midland.edu

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

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