

## **Midland College Syllabus**

2022 - 2023

MATH 1324

Mathematics for Business & Social Sciences

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:**

The application of common algebraic functions, including polynomial, exponential, logarithmic, and rational, to problems in business, economics, and the social sciences are addressed. The applications include mathematics of finance, including simple and compound interest and annuities; systems of linear equations; matrices; linear programming; and probability, including expected value. Prerequisite: TSI complete in Math.

### **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 linear, quadratic, polynomial, exponential and logarithmic functions, equations, and inequalities to construct graphs and tables, analyzing and applying linear programming and matrices to evaluate business, finance, economics and management application problems 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 linear, quadratic, polynomial, exponential and logarithmic equations and functions, and systems of equations using matrices with emphasis on finance, management, economics and business applications through course assignments, instructor created exams, and a departmental final exam.

### **Text, References and Supplies:**

- Lial, Hungerford, Holcomb, and Mullins Mathematics with Applications, 12<sup>th</sup> ed., Pearson.
  - 978-0-134-76762-8 (12 weeks)
- MyMathLab Access Code only
  - 978-0-135-90428-2 (24 weeks)
- Scientific Calculator
- Computer access may be required by some instructors.
- MyMathLab Access Code may be required by some instructors.

### **Student Learning Outcomes:**

Upon successful completion of this course, students will:

1. Apply elementary functions, including linear, quadratic, polynomial, rational, logarithmic, and exponential functions to solving real-world problems.
2. Solve mathematics of finance problems, including the computation of interest, annuities, and amortization of loans.
3. Apply basic matrix operations, including linear programming methods, to solve application problems.
4. Demonstrate fundamental probability techniques and application of those techniques, including expected value, to solve problems.
5. Apply matrix skills and probability analyses to model applications to solve real-world problems.

### **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.

### **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:**

At least 70% of the course grade will come from proctored assignments. Students will be evaluated based on grades which may including the following but are not limited to:

<b>Assessments</b>	<b>Percentage of Grade</b>	<b>Grade Range</b>
Exams	60-80%	90-100 A
Quizzes/Assignments	0-10%	89-80 B
Departmental 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:**

### Functions and Graphs

- 3.1 Functions
- 3.2 Graphs of Functions
- 3.3 Applications of Linear Functions
- 3.4 Quadratic Functions and Applications
- 3.5 Polynomial Functions
- 3.6 Rational Functions

### Exponential and Logarithmic Functions

- 4.1 Exponential Functions with Applications
- 4.3 Logarithmic Functions
- 4.4 Logarithmic and Exponential Equations

### Mathematics of Finance

- 5.1 Simple Interest and Discount
- 5.2 Compound Interest
- 5.3 Annuities, Future Value, and Sinking Funds
- 5.4 Annuities, Present Value, and Amortization

### Systems of Linear Equations and Matrices

- 6.1 Systems of Two Linear Equations in Two Variables
- 6.2 Larger Systems of Linear Equations
- 6.3 Applications of Systems of Linear Equations
- 6.4 Basic Matrix Operations
- 6.5 Matrix Products and Inverses
- 6.6 Applications of Matrices

### Linear Programming

- 7.1 Graphing Linear Inequalities in Two Variables
- 7.2 Linear Programming: The Graphic Method
- 7.3 Applications of Linear Programming

### Sets and Probability

- 8.1 Sets
- 8.3 Introduction to Probability
- 8.4 Basic Concepts of Probability

### Counting, Probability Distributions, and Further Topics in Probability

- 9.1 Probability Distributions and Expected Value

## **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](mailto: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](http://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 Cohlmlia (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  
Division E-Mail: [mns@midland.edu](mailto: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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