

## Midland College Syllabus

2022 - 2023

MATH 0414

4 Semester Credit Hours

(4 Lecture/0 Lab)

Co-requisite: MATH 1314 and Math 0180

### 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:

Math 0414 is designed to be the support co-requisite course for Math 1314, College Algebra, for students with TSI scores from 337 and 349. This course will give students the support needed to be successful in Math 1314 and will increase the proficiency in the areas of fundamental algebraic operations, exponents, simple factoring, solving linear and quadratic equations, graphing linear equations and functions, word problems, polynomial factoring, rational expressions, rational exponents, radicals, complex numbers, and quadratics.

Co-requisite: Math 1314 (College Algebra) and Math 0180 (Mathematical calculations-Math Lab)

### Text, References and Supplies:

*Required:* Sullivan, College Algebra Bundle with MathXL/Custom Pkg for Midland College, 10<sup>th</sup> ed., Pearson.

*Required:* Use of a functional computer with Internet access on a daily basis

*Required:* Scientific calculator

### Student Learning Outcomes:

After successfully completing this course the student should be able to:

1. Use the language of algebra.
2. Simplify algebraic expressions.
3. Solve and graph linear equations and inequalities.
4. Solve quadratic equations.
5. Create mathematical models.
6. Use appropriate algebra terminology.

7. Work problems related to: relations and functions, inequalities and equations, factoring polynomials, rational expressions, quadratics, complex numbers, graph linear and nonlinear equations, and inequalities.
8. Create and solve mathematical models.

### **Student Contributions, Responsibilities and Class Policies:**

Students will be expected to comply with the policies outlined in the Midland College Student Handbook. Instructor policies concerning attendance and academic behavior are consistent with the policies in the student handbook. Regular attendance is required to do well in this class.

Students are expected to arrive punctually and participate in class. Students should behave in an appropriate manner so as not to interfere with learning. What is inappropriate will be determined by the instructor. For example, please turn off all cell phones.

### **Attendance Policy:**

It is the responsibility of the students to know the policies and procedures associated with absences. These policies are set by instructors. It is critical to attend all classes in both co-requisite courses, Math 0414 and Math 1314 as well as Math0180, math lab.

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 MC Student Handbook on this subject. Please visit the [Midland College Catalog](#)

## Evaluation of Students:

Assignment Category	Percentage of total grade
Homework, Binder Checks, & Math Lab Reports	35%
Quizzes	10%
Participation	15%
Math 1314 Exams	40%

## Grades:

90- 100% for an A

80 – 89% for a B

70 -79% for a C

60 – 69% for a D

0 – 59% for a F

## Course Schedule:

- 1.R.1 Classify numbers.
- 1.R.2 Round and truncate numbers.
- 1.R.3 Compute the absolute value of a real number.
- 1.R.4 Add and subtract signed numbers.
- 1.R.5 Multiply and divide signed numbers.
- 1.R.6 Perform operations on fractions.
- 1.R.7 Understand the properties of real numbers.
- 1.R.8 Evaluate real numbers with exponents.
- 1.R.9 Use the order of operations to evaluate expressions.
- 1.R.10 Translate an English phrase into a mathematical expressions.
- 1.R.11 Graph points and write and graph inequalities.
- 1.R.12 Evaluate algebraic expressions.
- 1.R.13 Add and subtract polynomials.
- 1.R.14 Multiply polynomials.
- 1.R.15 Know formulas for special products.
- 1.R.16 Factor a polynomial by removing a common factor.
- 1.R.17 Factor the difference of two squares and the sum and difference of two cubes.
- 1.R.18 Factor perfect squares.
- 1.R.19 Factor a second degree polynomial:  $x^2 + Bx + C$ .
- 1.R.20 Factor by grouping.
- 1.R.21 Factor a second degree polynomial:  $Ax^2 + Bx + C$  where  $A \neq 1$ .
- 1.R.22 Solve polynomial equations using the Zero Product Property.
- 1.R.23 Use the least common multiple method.
- 1.R.24 Simplify or approximate  $n^{\text{th}}$  roots.
- 1.R.25 Use the product property to simplify square roots of constants.
- 1.R.26 Rationalize denominators.
- 1.R.27 Write radicals with rational exponents.
- 2.R.6 Solve a linear equation.
- 2.R.7 Plot points in a rectangular coordinate system.
- 2.R.8 Solve a formula for a variable.

- 3.R.1 Use interval notation.
- 3.R.4 Graph equations by plotting points.
- 3.R.5 Find intercepts form an equation and test the equation for symmetry.
- 3.R.6 Calculate and interpret the slope of a line.
- 3.R.8 Determine the domain of a variable.
- 4.R.2 Interpret the slope as an average rate of change.
- 5.R.2 Obtain information from or about the graph of a function.
- 5.R.3 Identify polynomials and determine the degree of a polynomial.
- 5.R.4 Divide polynomials using long division.
- 5.R.6 Divide polynomials using synthetic division.
- 5.R.8 Add, subtract, multiply, and divide complex numbers.
- 5.R.5 Graph vertical and horizontal lines.
- 5.R.7 Add and subtract rational expressions.
- 6.R.3 Evaluate expressions of the form  $a^{1/n}$
- 6.R.4 Evaluate expressions of the form  $a^{m/n}$  and Rules of Exponents
- 8.R.1 Graph linear equations using intercepts.
- 8.R.2 Define parallel and perpendicular lines.
- 8.R.3 Determine whether an equation is a conditional equation, an identity, or a contradiction.

### **Intellectual Competencies:**

1. Reading - Understanding the material incorporated in the text used in this course will require the student to analyze and interpret various mathematical concepts.
2. Listening - The primary teaching methods used in this course are discussion and lecture. Understanding the oral presentation of material will require the student to analyze and interpret various mathematical concepts.
3. Critical Thinking - Critical thinking, as exemplified by problem solving, is inherent in the study of any scientific discipline. Mathematical problems will be considered, discussed, and analyzed in this course.

### **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 Cohlma (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 Cohlmia (432) 685-4541  
Dean: Dr. Miranda Poage  
Secretary: Sarah Anderson  
Clerk: Liliana Orcutt

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