
The Mathematics Department requires that a grade of “C” or better be earned before taking MATH 1314.

**Course Description:** Topics of this course include graphing linear equations, solving systems of equations, laws of exponents, radicals, solving quadratic equations, and functions. The purpose of this course is to prepare students for college algebra. **Calculators are permitted in this course.**

**Objectives:** This course is designed to develop some of the algebraic skills needed to be successful in college algebra. There are two types of students who shall benefit from the course. Those are the ones who need an original presentation of the material and also those who need a review. The student who successfully completes the course should be ready for the material which is presented in MATH 1314. The student must demonstrate through testing an understanding of the material presented.

**Course Outline:**
1. **Equations, Inequalities, and Problem Solving**
   1.1 Linear Equations in One Variable
   1.2 An Introduction to Problem Solving
   1.3 Formulas and Problem Solving
   1.4 Linear Inequalities and Problem Solving
   1.5 Compound Inequalities
   1.6 Absolute Value Equations
   1.7 Absolute Value Inequalities

2. **Graphs and Functions**
   2.1 Graphing Equations
   2.2 Introduction to Functions
   2.3 Graphing Linear Functions
   2.4 The Slope of a Line
   2.5 Equations of Lines
   2.6 Graphing Piecewise-Defined Functions and Shifting and Reflecting Graphs of Functions
   2.7 Graphing Linear Inequalities

3. **Systems of Linear Equations and Inequalities**
   3.1 Solving Systems of Linear Equations in Two Variables
   3.2 Solving Systems of Linear Equations in Three Variables
   3.3 Systems of Linear Equations and Problem Solving
4. Exponents, Polynomials, and Polynomial Functions
4.1 Exponents and Scientific Notation
4.2 More Work with Exponents and Scientific Notation
4.3 Polynomials and Polynomial Functions
4.4 Multiplying Polynomials
4.5 The Greatest Common Factor and Factoring by Grouping
4.6 Factoring Trinomials
4.7 Factoring by Special Products
4.8 Solving Equations by Factoring and Problem Solving

5. Rational Expressions
5.1 Rational Functions and Multiplying and Dividing Rational Expressions
5.2 Adding and Subtracting Rational Expressions
5.3 Simplifying Complex Fractions
5.4 Dividing Polynomials: Long Divisions and Synthetic Division
5.5 Solving Equations Containing Rational Expressions
5.6 Rational Equations and Problem Solving
5.7 Variation and Problem Solving

6. Rational Exponents, Radicals, and Complex Numbers
6.1 Radicals and Radical Functions
6.2 Rational Exponents
6.3 Simplifying Radical Expressions
6.4 Adding, Subtracting, and Multiplying Radical Expressions
6.5 Rationalizing Denominators and Numerators of Radical Expressions
6.6 Radical Equations and Problem Solving
6.7 Complex Numbers

7. Quadratic Equations and Functions
7.1 Solving Quadratic Equations by Completing the Square
7.2 Solving Quadratic Equations by the Quadratic Formula
7.3 Solving Equations by Using Quadratic Methods (optional)
7.4 Nonlinear Inequalities in One Variable (optional)
7.5 Quadratic Functions and Their Graphs (optional)
7.6 Further Graphing of Quadratic Functions (optional)

8. Exponential and Logarithmic Functions
8.1 The Algebra of Functions; Composite Functions
**Evaluation:** Students will be evaluated on the basis of knowledge demonstrated through class participation, homework and written examinations. The student’s ability to think critically can be observed in class participation by providing missing key parts in demonstration situations as well as synthesizing learned information to develop new concepts. A knowledge of the mechanics of algebra can be demonstrated by short examination, to insure that the ability is current, in addition to major examinations that evaluate the summation of information over a greater period time.

**Review for the Final Exam**
To get the review for the final exam, go to [www.alvincollege.edu](http://www.alvincollege.edu). Click on the “Programs and Degrees” link on the gray bar under the photograph. Scroll down to the “Mathematics” link in the center of the window. Click on that link and then the link for “Math Developmental Resources”. Scroll down and select from the list of reviews and keys.

**Methods of Evaluation**
1. Homework/Outside the classroom assignments
2. Quizzes
3. Exams
4. Comprehensive Final Exam (**mandatory 25% of the final grade**)

**Determination of Grade**

<table>
<thead>
<tr>
<th>Course Average</th>
<th>Grade</th>
</tr>
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<tbody>
<tr>
<td>90-100</td>
<td>A</td>
</tr>
<tr>
<td>80-89</td>
<td>B</td>
</tr>
<tr>
<td>70-79</td>
<td>C</td>
</tr>
<tr>
<td>Below 70</td>
<td>W, I, F, or R</td>
</tr>
</tbody>
</table>

A maximum of two R’s may be earned in this course.

**I Incomplete**
An incomplete may be awarded when the instructor determines that minimal work on the part of the student and the instructor will complete the course requirements. An incomplete grade not changed by the instructor to a grade of completion (A, B, C, or F) by the end of the following semester will automatically be changed to an F.

**R Re-enroll**
The re-enroll grade is used when the student is making satisfactory progress toward course objectives and needs additional time and instruction to master the material. The grade of re-enroll may be earned a maximum of two times in this course.

**W Withdrawal**
Students who file withdrawal requests by the published deadline will receive a grade of W.

**Attendance:** Regular attendance in class is expected. Any work missed and not completed will affect the grade of the student regardless of the reason for the absence. Your instructor may initiate administrative withdrawal procedures for a student who exceeds course absence standards (6 hours). Withdrawal from class may affect insurance eligibility, financial aid, and/or Veteran’s benefits.

**Classroom Behavior:** It is expected that students will behave in a mature and courteous manner. Disruptive behavior during class will not be tolerated. Students are expected to be attentive, take notes, ask pertinent questions, arrive on time, and not leave until the class is dismissed. Conflicts which arise between the scheduled class time and the student’s personal schedule must be resolved by the student.
**Learning Lab:** The Learning Lab is available to students enrolled in MATH 0312. The Learning Lab and the Library have a copy of the Student’s Solutions Manual (complete solutions to all odd-numbered exercises from the text) and the Instructor’s Solutions Manual (contains complete step-by-step worked out solutions to all exercises in the textbook). DVD’s (in a lecture format featuring worked-out examples and exercises taken from each section of the text) may be checked out for 4 days (renewing the checkout is an option as long as there is no request on the waiting list). Tutoring is also offered to students enrolled in MATH 0312 during posted hours.

**ACADEMIC HONESTY IS ASSUMED.** A student found guilty of scholastic dishonesty is subject to disciplinary action. Violations such as plagiarism, cheating on tests, and collusion are described in the ACC Student Handbook. Consequences are at the discretion of the instructor and range from receiving a 0 on the assignment/test to failing the course to expulsion from the College.

Camcorders and any other video recording devices are prohibited in the classroom. Audio recording may be allowed **ONLY WITH THE PERMISSION OF THE INSTRUCTOR.**

**CELL PHONES** are not to be used and are not to ring during class. Cell phones are not to be out during tests. IF there are special circumstances, arrangements must be made with the instructor.

**ADA COMPLIANCE:** This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the policy of Alvin Community College to provide reasonable accommodations for qualified individuals who are students with disabilities. It is the student’s responsibility to contact the Counseling Center in a timely manner to arrange for appropriate accommodations.