MATH 0312
INTERMEDIATE ALGEBRA
COURSE SYLLABUS

CONTACT INFORMATION

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281-756-3716
ckilgore@alvincollege.edu (preferred method of communication)
*please allow 48 hours to respond to any messages

OFFICE HOURS

TBA

COURSE MATERIALS


Optional Purchase: My Mathlab Student Version Stand Alone:

These can be purchased at the ACC bookstore.

Calculator: You may use a non-graphing calculator.

SUPPORT SERVICES:

• **Cyberlink Computer Lab:** Features two dozen computers with Internet access and software programs needed for classes, including specialized software.
  Cyberlink Lab Location: Building A, 1st floor, Room A-173
  Cyberlink Lab Hours:
  Monday and Tuesday 8:00 am to 7 pm
  Wednesday to Friday 8:00 am to 5 pm

• **Learning Lab:** Tutoring is offered to students enrolled in MATH 0312 during posted hours in the Learning Lab. The Library and Learning Lab have a copy of the Instructor Solutions Manual (fully worked solutions to all textbook exercises).
  Learning Lab Location: Building A, 2nd floor, Room A-210 (inside Library)
  Learning Lab Hours:
Monday – Thursday 8:00 am – 9:00 pm
Friday 8:00 am – 4:00 pm

- **Library:** Building A, 2nd floor
  Hours: 7:30 am – 9:00 pm M – Th and 7:30 am – 5:00 pm Friday

**COURSE INFORMATION**

**Description:**

**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.

**Prerequisite:** Appropriate score on a placement test or have passed MATH 0310 with a grade of A, B, or C.

**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**

**Equations, Inequalities, and Problem Solving**
- 2.1 Linear Equations in One Variable
- 2.2 An Introduction to Problem Solving
- 2.3 Formulas and Problem Solving
- 2.4 Linear Inequalities and Problem Solving
- 2.5 Compound Inequalities
- 2.6 Absolute Value Equations
- 2.7 Absolute Value Inequalities

**Graphs and Functions**
- 3.1 Graphing Equations
- 3.2 Introduction to Functions
- 3.3 Graphing Linear Functions
- 3.4 The Slope of a Line
- 3.5 Equations of Lines
- 3.6 Graphing Piecewise-Defined Functions and Shifting and Reflecting Graphs of Functions
- 3.7 Graphing Linear Inequalities
Systems of Linear Equations and Inequalities
- 4.1 Solving Systems of Linear Equations in Two Variables
- 4.2 Solving Systems of Linear Equations in Three Variables
- 4.3 Systems of Linear Equations and Problem Solving

Exponents, Polynomials, and Polynomial Functions
- 5.1 Exponents and Scientific Notation
- 5.2 More Work with Exponents and Scientific Notation
- 5.3 Polynomials and Polynomial Functions
- 5.4 Multiplying Polynomials
- 5.5 The Greatest Common Factor and Factoring by Grouping
- 5.6 Factoring Trinomials
- 5.7 Factoring by Special Products
- 5.8 Solving Equations by Factoring and Problem Solving

Rational Expressions
- 6.1 Rational Functions and Multiplying and Dividing Rational Expressions
- 6.2 Adding and Subtracting Rational Expressions
- 6.3 Simplifying Complex Fractions
- 6.4 Dividing Polynomials: Long Divisions and Synthetic Division
- 6.5 Solving Equations Containing Rational Expressions
- 6.6 Rational Equations and Problem Solving
- 6.7 Variation and Problem Solving

Rational Exponents, Radicals, and Complex Numbers
- 7.1 Radicals and Radical Functions
- 7.2 Rational Exponents
- 7.3 Simplifying Radical Expressions
- 7.4 Adding, Subtracting, and Multiplying Radical Expressions
- 7.5 Rationalizing Denominators and Numerators of Radical Expressions
- 7.6 Radical Equations and Problem Solving
- 7.7 Complex Numbers

Quadratic Equations and Functions
- 8.1 Solving Quadratic Equations by Completing the Square
- 8.2 Solving Quadratic Equations by the Quadratic Formula
- 8.3 Solving Equations by Using Quadratic Methods (optional)
- 8.4 Nonlinear Inequalities in One Variable (optional)
- 8.5 Quadratic Functions and Their Graphs (optional)
- 8.6 Further Graphing of Quadratic Functions (optional)

Methods of Evaluation

1. Homework: I will assign homework for each section covered in class. This homework can be done via textbook or MML. The choice is yours. I will not grade homework done using the textbook and I will not count any homework scores on MML. Homework is treated as prep for the quizzes and exams.

2. Quizzes: Most lecture days, there will be a quiz over previous material. On lecture days after an exam, there will be no quiz. Your lowest three quiz grades will be dropped. If you miss a quiz, your will
receive a zero for that quiz and will not have the opportunity to “make-up” that quiz. The average of
the remaining quizzes will be 10% of your course average.

3. Exams: You will have three “hourly” exams that cover the following material. Each exam is 20% of
your course average. You will be given at least a two week notice for exam dates. If you miss an exam,
you will have the opportunity to complete that exam according to the following:

1. If exam is taken on original exam date, then no reduction is taken.
2. If exam is taken one lecture day from original date taken, then you will receive a 5 point
reduction in your grade.
3. If exam is taken two lecture days from the original exam date, then you will receive a 10
point reduction in your grade.
4. If exam is taken three lecture days from the original exam date, then you will receive a 20
point reduction in your grade.
5. No opportunity for completion is given if student attempts to complete the exam four or
more days from the original exam date. You will be given a score of zero.

Exam 1: Chapters 2, 3, and 4
Exam 2: Chapters 5 and 6
Exam 3: Chapters 7 and 8

4. Comprehensive Final Exam: The final exam will be a comprehensive, multiple-choice exam and will
count for 30% of the course average. Date/time is TBA.

Grading System

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<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
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</tr>
<tr>
<td>Quiz Avg</td>
<td>10%</td>
</tr>
<tr>
<td>Exam 1</td>
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<tr>
<td>Exam 2</td>
<td>20%</td>
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<tr>
<td>Exam 3</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
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</tbody>
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Attendance Regular attendance in class is expected. If an absence is unavoidable, the student is
responsible for completing all work missed during the absence. Any work missed and not completed
may affect the grade of the student regardless of the reason for the absence. It should be noted that
ceasing to attend class does not terminate enrollment. Therefore, a student who ceases to attend class
without officially withdrawing from that class may receive a failing grade.

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.

Camcorders Camcorders and any other video recording devices are prohibited in the classroom. Audio
may be allowed ONLY WITH THE PERMISSION OF THE INSTRUCTOR.
Cellular phones Cell phones are not to be used and are not to ring during the class. Cell phones are not to be out during tests. If there are special circumstances, arrangements must be made with the instructor.

AMERICANS WITH DISABILITIES ACT ACC complies with ADA and 504 Federal guidelines by affording equal access to individuals who are seeking an education. Students who have a disability and would like classroom accommodations must register with the Office of Disability Services, A 136, (281)756-3533. Instructors are not able to provide accommodations until the proper process has been followed.

CODE OF ACADEMIC INTEGRITY AND HONESTY Alvin Community College students are members of an institution dedicated to the pursuit of knowledge through a formalized program of instruction and learning. At the heart of this endeavor, lie the core values of academic integrity which include honesty, truth, and freedom from lies and fraud. Because personal integrity is important in all aspects of life, students at Alvin Community College are expected to conduct themselves with honesty and integrity both in and out of the classroom. Incidents of academic dishonesty will not be tolerated and students guilty of such conduct are subject to severe disciplinary measures.