MATH 0310 – BEGINNING ALGEBRA
Math Department
COURSE SYLLABUS

TERM:

INSTRUCTOR:       DAY(S):

OFFICE:           TIME:

OFFICE HOURS:

OFFICE PHONE
NUMBER:

INSTRUCTOR E-MAIL
ADDRESS:

A.  **TEXT:** Prealgebra and Introductory Algebra 3rd Edition; Bittinger/Ellenbogen

   -or-

   **Required Access Code:** My Mathlab Student Version Stand Alone.

   The textbook or access code kit can be purchased at the ACC bookstore, which is open Monday through Thursday 7:30am to 7:00pm. Bookstore hours may vary during holidays, so please call the bookstore at 281-756-3681 for information. Either item can also be purchased online and mailed directly to your residence from: http://www.alvinccstorel.com/

   Additional Items:
   1. #2 Pencils
   2. Blank paper for taking notes and for working with math problems.
   3. Scantron Forms
   4. Valid e-mail address that you can check on a regular basis

B.  **TSI, Math Department, and Alvin Community College Requirements:**

   The Mathematics Department requires that a grade of “C” or better be earned before taking MATH 0312.

   If you are taking this course because of TSI requirements, then you will be required to sign the Developmental Education Student Agreement. Students who do not sign the Developmental Education Student Agreement will have their records put on hold. The hold will block future registration and transcript services.

   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 ACC 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.

C.  **Prerequisites:** Appropriate test score.

D.  **Course Description**

   This course includes a study of signed numbers, solving linear equations and inequalities, applications, polynomial operations, factoring polynomials, rational expression operations and equations, and graphing. **Calculators are permitted in this course.**
E. **Objectives**
This course is designed to develop the basic skills of algebra on an individual basis. 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 of the aforementioned math skills. The student who successfully completes the course should be ready for the material which is presented in Math 0312. During the semester the student must demonstrate an understanding of the material presented through testing.

F. **Communication with your Instructor:** The preferred method of communication is through and e-mail message. Please write clearly and coherently, using complete sentences, and include your first and last name in all e-mails. Please write the course’s title in the subject line of the e-mail.

G. **Attendance:** Students who are enrolled in this class due to a TSI requirement must remember that both enrollment and participation are required. Participation, at a minimum, means regular attendance. Missing more than 8 hours of this class could result in your being dropped from this course, being withdrawn from college, or receiving a grade of "F" in the course.

H. **Grading:**
a. **Methods of Evaluation:**
   i. Homework
   ii. Quizzes
   iii. Hour Exams
   iv. Lab Assignments/out of class home/projects (Mandatory – must count the equivalent of an hour exam)
   v. Comprehensive Final Exam (Mandatory – must count at least 25% of the semester grade)

<table>
<thead>
<tr>
<th>Course Average</th>
<th>Grade</th>
</tr>
</thead>
<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,F, or R</td>
</tr>
</tbody>
</table>

The Mathematics Department requires that a grade of “C” or better be earned in this class before taking the next class-MATH 0312.

I. **Incomplete**
A grade of “I”- Incomplete- is given only in extreme, verifiable circumstances and at the discretion of the instructor. 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. (See withdrawal information above). Last day to withdraw from the course will be posted. It is recommended that the student talk to the instructor before withdrawing. If a decision is made to withdraw, the procedure is outlined in the ACC Student Handbook at [http://www.alvincollege.edu/resources/pdfs/student_handbook.pdf](http://www.alvincollege.edu/resources/pdfs/student_handbook.pdf).

I. **Course Assistance:** This course has additional sources to aid the student in mastering the required concepts:
   1. A student Solutions Manual is available in the text. This manual contains step-by-step solutions to the odd numbered exercises from the chapters in the text.
   2. The ACC Learning Lab and Writing Center, A-204, and its resources are available to all registered students.
   3. **FREE MATH** Tutoring is offered to students enrolled in MATH 0310 classes during posted hours.
The lab also has additional computer access: http://www.alvincollege.edu/resources/learning_lab.htm

4. The ACC Library website: http://www.alvincollege.edu/library/default.htm DVDs of the material are available in the ACC Library. These may be viewed in the library’s study rooms or checked out for 4 days.

5. The access code that is included with the textbook is used to register the student in My Math Lab Tutorial Software and free math tutoring on-line through Addison-Wesley’s Tutor Center.

6. Extra practice and additional resources are also available at http://www.interactmath.com, an online supplement provided by the publisher.

7. WEBSITE, Passwords or Computer Labs - Contact the IT Dept. Help Desk at 281-756-3544.

8. Lab Computers: Computers with high speed Internet connections are available for use by all registered ACC students in many of the 23 ACC/PCC computer labs, including the Cyber Lab, room A-173. Cyber Lab hours are: Mon-Thurs. 8:00am-8:00pm, Friday 8:00am-5:00pm and Sunday 4:00pm-8:00pm. The Cyber lab is closed on Fridays during the summer Semesters. Call the IT Help Desk at 281-456-3544 for more information about all ACC computer labs.

J. Review for the Final Exam
To get the review for the final exam, go to www.alvincollege.edu. Click on “Certificates 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 “Developmental Math Resources”. Scroll down and select from the list of reviews and keys. Students who are enrolled in this class due to TSI requirement must remember that both enrollment and participation are required. Participation, at a minimum, means regular attendance. Missing more than 8 hours of this class could result in your being dropped from this course, being withdrawn from the college or receiving a grade of F in the course.

K. Classroom Behavior
1. 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.
2. Camcorders and any other video recording devices are prohibited in the classroom. Audio recording may be allowed only with the permission of the instructor.
3. Cellphones are not to be used and are not to ring during class at any time. Texting is never allowed in the classroom. If there are special circumstances, arrangements must be made with the instructor first.
4. 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.

Course Outline -- Approximate number of hours of class needed to complete the work is indicated.

A. Introduction to Real Numbers and Algebraic Expressions – 6 hours
   1. Introduction to Algebra
   2. The Real Numbers
   3. Addition of Real Numbers
   4. Subtraction of Real Numbers
   5. Multiplication of Real Numbers
   6. Division of Real Numbers
   7. Properties of Real Numbers
   8. Simplifying Expressions; Order of Operations

B. Solving Equations and Inequalities – 6 hours
   1. Solving Equations: The Addition Principle
2. Solving Equations: The Multiplication Principle
3. Using the Principles Together
4. Formulas
5. Applications of Percent
6. Applications and Problem Solving
7. Solving Inequalities
8. Applications and Problem Solving with Inequalities

C. Graphs of Linear Equations – 6 hours
1. Graphs and Applications of Linear Equations
3. Slope and Applications
4. Equations of Lines
5. Graphing using the Slope and the y-Intercept
6. Parallel and Perpendicular Lines
7. Graphing Inequalities in Two Variables

D. Polynomials: Operations – 6 hours
1. Integers as Exponents
2. Exponents and Scientific Notation
3. Introduction to Polynomials
4. Additions and Subtraction of Polynomials
5. Multiplication of Polynomials
6. Special Products
7. Operations with Polynomials in Several Variables
8. Division of Polynomials

E. Polynomials: Factoring – 6 hours
1. Introduction to Factoring
2. Factoring Trinomials of the Type: $x^2 + bx + c$
3. Factoring $ax^2 + bx + c$, $a \neq 1$, Using FOIL
4. Factoring $ax^2 + bx + c$, $a \neq 1$, Using the ac - Method
5. Factoring Trinomial Squares and Differences of Squares
6. Factoring: A General Strategy
7. Solving Quadratic Equations by Factoring (Introduce Quadratic Formula here)
8. Applications of Quadratic Equations

F. Rational Expressions and Equations - 8 hours
1. Multiplying and Simplifying Rational Expressions
2. Division and Reciprocals
3. Least Common Multiples and Denominators
4. Adding Rational Expressions
5. Subtracting Rational Expressions
6. Solving Rational Equations
7. Applications Using Rational Equations and Proportions
8. Complex Rational Expressions
9. Direct and Inverse Variation
General Information for Math Labs

1. The Learning Lab is located on the second floor of the A Building to the left of the library. The room designation is A232. The lab is open from 8 a.m. until 9 p.m. Monday through Thursday, and from 8 a.m. until 4 p.m. on Friday. During the summer semesters the lab is closed on Friday.

2. Students must sign in at the central desk with lab personnel to use the computers. A student ID is necessary. (IDs are obtained in the library. Proof of registration must be shown to have an ID made.)

3. Students must register themselves for math labs, www.coursecompass.com enrolling in the site and completing the lab assignments can be done in the learning lab or on any computer with internet access. Directions for registration are given in “Take a Tour” link on the website. Lab personnel can answer questions about registration.

4. Students may fill out the chart below to keep a personal record of lab quiz scores. When the student is finished with a quiz, the results may be printed (at the cost of $.10 a page in the Learning Lab). This printout of scores is to be turned in to the student’s instructor. Printing is free in the Cyber Lab.

5. The Cyber Lab (downstairs, A173) has internet access, but no tutors. Hours are 8 a.m. until 8 p.m. Monday through Thursday, 8 a.m. until 5 p.m. Friday, and noon until 5 p.m. on Saturdays. During the summer semesters; the lab is closed on Friday.

<table>
<thead>
<tr>
<th>Date</th>
<th>Quiz</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.2 – 9.6</td>
<td>Real Number Operations</td>
<td></td>
</tr>
<tr>
<td>9.8</td>
<td>Order of Operations</td>
<td></td>
</tr>
<tr>
<td>10.3</td>
<td>Solving Equations</td>
<td></td>
</tr>
<tr>
<td>10.4, 10.5 &amp; 10.6</td>
<td>Equations, Formulas, &amp; Applications</td>
<td></td>
</tr>
<tr>
<td>10.7 &amp; 10.8</td>
<td>Solving Inequalities &amp; Applications</td>
<td></td>
</tr>
<tr>
<td>11.1 &amp; 11.2</td>
<td>Beginning Graphing</td>
<td></td>
</tr>
<tr>
<td>11.3 – 11.5</td>
<td>Slope and More Graphing</td>
<td></td>
</tr>
<tr>
<td>11.6 &amp; 11.7</td>
<td>Special lines &amp; Graphing Inequalities</td>
<td></td>
</tr>
<tr>
<td>12.4, 12.5 &amp; 12.7</td>
<td>Polynomial Operations</td>
<td></td>
</tr>
<tr>
<td>13.2-13.5</td>
<td>Factoring Trinomials</td>
<td></td>
</tr>
<tr>
<td>13.1 – 13.6</td>
<td>Factoring Polynomials</td>
<td></td>
</tr>
<tr>
<td>14.1 &amp; 14.2</td>
<td>Multiplying and Dividing Rationals</td>
<td></td>
</tr>
<tr>
<td>14.3 – 14.5</td>
<td>Adding and Subtracting Rationals</td>
<td></td>
</tr>
<tr>
<td>14.6 &amp; 14.8</td>
<td>Solving Equations and Simplifying</td>
<td></td>
</tr>
</tbody>
</table>
 TEXAS HIGHER EDUCATION ASSESSMENT
MATHEMATICS

The mathematics section of the THEA test includes skills related to fundamental mathematics, algebra, and geometry. All the skills eligible for testing are described below.

THEA MATHEMATICS SKILLS
FUNDAMENTAL MATHEMATICS

1. Solve word problems involving integers, fractions, decimals, and units of measurement.
   1.1 Solve word problems involving integers.
   1.2 Solve word problems involving fractions.
   1.3 Solve word problems involving decimals (including percents).
   1.4 Solve word problems involving ratio and proportions.
   1.5 Solve word problems involving units of measurement and conversions (including scientific notation).

2. Solve problems involving data interpretation and analysis.
   2.1 Interpret information from line graphs, bar graphs, pictographs, and pie charts.
   2.2 Interpret data from tables.
   2.3 Recognize appropriate graphic representations of various data.
   2.4 Analyze and interpret data using measures of central tendency (mean, median, and mode.).
   2.5 Analyze and interpret data using the concept of variability.

ALGEBRA

3. Graph numbers or number relationships.
   3.1 Identify the graph of a given equation.
   3.2 Identify the graph of a given inequality.
   3.3 Find the slope and/or intercepts of a given line.
   3.4 Find the equation of a line.
   3.5 Recognize and interpret information from the graph of a function (including direct and inverse variation).

   4.1 Find the value of the unknown in a given one-variable equation.
   4.2 Express one variable in terms of a second variable in two-variable equations.
   4.3 Solve systems of two equations in two variables (including graphical solutions).

5. Solve word problems involving one and two variables.
   5.1 Identify the algebraic equivalent of a stated relationship.
   5.2 Solve word problems involving one and two unknowns.

6. Understand operations with algebraic expressions and functional notation.
   6.1 Factor quadratics and polynomials.
   6.2 Perform operations on and simplify polynomial expressions.
   6.3 Perform operations on and simplify rational expressions.
   6.4 Perform operations on and simplify radical expressions.
   6.5 Apply principles of functions and functional notation.

7. Solve problems involving quadratic equations.
   7.1 Graph quadratic functions.
   7.2 Graph quadratic inequalities.
   7.3 Solve quadratic equations using factoring, completing the square, or the quadratic formula.
   7.4 Solve problems involving quadratic models.
GEOMETRY

8. Solve problems involving geometric figures.
   8.1 Solve problems involving two-dimensional geometric figures (e.g., perimeter and area problems).
   8.2 Solve problems involving three-dimensional geometric figures (e.g., volume and surface area problems).
   8.3 Solve problems using the Pythagorean Theorem.

9. Solve problems involving geometric concepts.
   9.1 Solve problems using principles of similarity and congruence.
   9.2 Solve problems using principles of parallelism and perpendicularly.

PROBLEM SOLVING

10. Apply reasoning skills.
    10.1 Draw conclusions using inductive reasoning.
    10.2 Draw conclusions using deductive reasoning.

11. Solve applied problems involving a combination of mathematical skills.
    11.1 Apply combinations of mathematical skills to solve problems.
    11.2 Apply combinations of mathematical skills to solve a series of related problems.