STUDENT INFORMATION PLAN
MATH 1314
COLLEGE ALGEBRA

INSTRUCTOR:       DAY(S):

OFFICE:       TIME:

OFFICE HOURS:       ROOM NUMBER:

OFFICE PHONE NUMBER:       INSTRUCTOR E-MAIL ADDRESS:

Text:  

Course Description:  Topics of this course include a review of the fundamental concepts of algebra, which will be followed by a more intensive study of algebraic equations and inequalities, functions and graphs, graphs and zeros of polynomial functions, rational functions, exponential and logarithmic functions, systems of equations and inequalities, matrices and determinants, sequences and series, and the binomial theorem.

Objectives:  This course is designed to develop the algebraic skills needed to continue in mathematics or to have a basic understanding of algebra, which is used in other disciplines.  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 must demonstrate an understanding of the topics covered in the course through testing.  Graphing calculators are needed for this course.

1. Students will demonstrate the ability to think critically about mathematics through the use of abstract notation in prepared algebraic statements and by deriving algebraic statements for problems in statement form.
2. Students will demonstrate the ability to understand the different real and complex number systems by solving prepared problems and writing and solving problems that require using specific number systems.
3. Students will demonstrate the ability to use various arithmetic, graphic and algebraic techniques through the solution of problems designed to evaluate the specific techniques.
4. Students will demonstrate the ability to recognize two and three-dimensional geometric configurations and apply geometric expressions by solving problems that involve the application of geometric concepts.
5. Students will demonstrate an understanding of equations and inequalities of various types of functions.  This understanding will be demonstrated by relating the algebraic, the graphic, and the numeric concepts.

Course Outline:
A. Equations and Inequalities
   1. Linear Equations
   2. Quadratic Equations
   3. Quadratic Equations in the Complex Number System
   4. Radical Equations; Equations Quadratic in Form; Factorable Equations
   5. Solving Inequalities
   6. Equations and Inequalities Involving Absolute Value
   7. Problem Solving: Interest, Mixture, Uniform Motion, Constant Rate Jobs
B. Graphs
   1. Distance and Midpoint Formulas
   2. Graphs of Equations
   3. Lines
   4. Circles
   5. Variation
C. Functions and Their Graphs
   1. Functions
   2. The Graph of a Function
   3. Properties of Functions
   4. Library of Functions; Piecewise-defined Functions
   5. Graphing Techniques: Transformations
   6. Mathematical Models: Constructing Functions
D. Linear and Quadratic Functions
   1. Linear Functions and their Properties
   2. Building Linear Functions from Data (optional)
   3. Quadratic Functions and their Properties
   4. Quadratic Models
   5. Inequalities involving Quadratic Functions

E. Polynomial and Rational Functions
   1. Quadratic Functions and Models
   2. Properties of Rational Functions
   3. The graph of a Rational Function
   4. Polynomial and Rational Inequalities

F. Exponential and Logarithmic Functions
   1. Composite Functions
   2. One-to-One Functions; Inverse Functions
   3. Exponential Functions
   4. Logarithmic Functions
   5. Properties of Logarithms
   6. Logarithmic and Exponential Equations
   7. Compound Interest
   8. Exponential Growth and Decay; Newton’s Law; Logistic Models

F. Systems of Equations and Inequalities
   1. Systems of Linear Equations: Substitution and Elimination
   2. Systems of Linear Equations: Matrices
   3. Systems of Linear Equations: Determinants

H. Sequences; Induction; the Binomial Theorem
   1. Sequences
   2. Arithmetic Sequences
   3. Geometric Sequences; Geometric Series
   4. The Binomial Theorem

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.

End of Course Assessment Exam: An assessment exam will be administered at the end of the semester. The exam will be a minimum of 5% of the course grade.

Methods of Evaluation
1. Homework
2. Quizzes
3. Exams
4. End of Course Assessment Exam
5. Comprehensive Final Exam

Grading System

<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>60-69</td>
<td>D</td>
</tr>
<tr>
<td>Below 60</td>
<td>W, I, or F</td>
</tr>
</tbody>
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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 enrollment in other courses, insurance eligibility, financial aid, and/or Veteran’s benefits.

Learning Lab/Library: The Learning Lab is available to students enrolled in MATH 1314. The Learning Lab has computers with text-specific software, CD Lecture Series (textbook-specific CD-ROMS containing short video clips of an instructor working key book examples), Student Solutions Manual (worked solutions to all odd-numbered exercises from the text and complete solutions
for chapter review problems and chapter tests) and Instructor’s Resource Manual (contains complete step-by-step worked out solutions to all even-numbered exercises in the textbook). CD-ROMS 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 1314 during posted hours.

MyMathLab: MyMathLab® is a complete online course to help you succeed in learning. MyMathLab contains an online version of your textbook with links to multimedia resource, such as video clips and practice exercises, correlated to the examples and exercises in the text. MyMathLab provides you with online homework and tests and generates a personalized study plan based on your results. The study plan links you to unlimited tutorial exercises for further study, so you can practice until you have mastered the skills.

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.

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 zero on the assignment/test to failing the course to expulsion from the College.

Camcorders: Camcorders and any other video recording devices are prohibited in the classroom. Audio recording 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 class. Cell phones are not to be out during tests. If there are special circumstances, arrangements must be made with the instructor.