**Course:** College Algebra

**Instructor:** Mr. Anthony Embry

**Tutoring Hours:** I will make myself available to assist you in any way before school hours (typically 7:15am to 8:15am).

**Grading Policy:** During the semester, there will be daily assignments and quizzes, tests, and a comprehensive final exam. The daily assignments and quizzes will count 10%, tests will count 70%, and the final exam will count 20%. Please note that the scale that will be used in determining your overall course grade is as follows:

A = 90-100

B = 80-89

C = 70-79

D = 60-69

F = Below 60

**Other Policies:**

If you miss a unit test for whatever reason, you will be allowed to make up an alternate version of the exam. All make-ups must be completed within 2 days of the missed exam.

Feel free to discuss any problems that concern your participation in the class or the class as a whole. I will do all that I can to resolve the problem in a fair and equitable manner. After all, the goal of this course is to prepare you for success in mathematics.

This course develops and extends the student's basic algebra concepts and problem-solving skills in the context of functions, models, and applications. Topics include exponents and radicals, graphing, setting up and solving equations in linear, quadratic, and other forms, systems of equations, and operations on functions. Properties and applications of linear, quadratic, polynomial, rational, exponential, and logarithmic functions are studied.

**LEARNING OUTCOMES:**

Students who successfully complete College Algebra will be able to perform the following tasks:

*  Simplifying Rational Expressions
*  Adding, Subtracting, Multiplying, and Dividing Rational Expressions
*  Simplifying Complex Rational Expressions
*  Solving Linear Equations in One Variable
*  Solving Equations Containing Rational Expressions
*  Solving Linear Inequalities in One Variable
*  Solving Quadratic Equations by Factoring, Square Root Property, Completing the Square, and Quadratic Formula
*  Solving Higher Order Polynomial Equations by Factoring
*  Solving Higher Order Polynomial Equations using the Quadratic Formula
*  Solving Equations Containing Radicals
*  Finding Intercepts of a Linear Equation in Two Variables and Graphing Linear Equations by Plotting Intercepts
*  Graphing Horizontal and Vertical Lines
*  Finding the Slope of a Line Given Two Points, or Given the Equation of the Line
*  Graphing Linear Equations in Two Variables using the Slope and a Point on the Line
*  Using Point-Slope Form and Slope-Intercept Form to write the Equation of a Line
*  Finding the Equations of Parallel and Perpendicular Lines
*  Finding the Domain and Range of a Relation Given a Set of Ordered Pairs, or Given the Graph of the Relation
*  Determining Whether or Not a Relation is a Function using the Graph or an Equation
*  Evaluating Functions; Difference Quotient
*  Finding the Domain of a Function
*  Combinations of Functions
*  Compositions of Functions
*  Finding the Inverse of a One-to-One Function
*  Finding the vertex of a Quadratic Function in vertex form
*  Finding the vertex of a Quadratic Function in standard form
*  Finding the intercepts of the Graph of a Quadratic Function
*  Graphing Quadratic Functions using the Vertex, Intercepts, and Two Other Points
*  Graphing Higher Order Polynomial Functions
*  Dividing Polynomials using Long Division and Synthetic Division
*  Using the Remainder and the Factor Theorem to Determine Zeroes of Higher Order Polynomial Functions
*  Finding Equations of Vertical, Horizontal, and Slant Asymptotes of a Rational Function
*  Solving Polynomial Inequalities
*  Solving Rational Inequalities
*  Solving Exponential Equations
*  Applications of Exponential Functions
*  Applications of the Natural Exponential Function
*  Using the Basic Properties of Logarithms
*  Using the Change of Base Property of Logarithms
*  Using the Power Rule, Quotient Rule, and Power Rule to Expand Logarithmic Expressions
*  Using the Power Rule, Quotient Rule, and Power Rule to Condense Logarithmic Expressions
*  Solving Logarithmic Equations
*  Solving Systems of Equations in Two Variables using the Substitution Method
*  Solving Systems of Equations in Two Variables using the Elimination Method
* **CALCULATORS AND ELECTRONIC DEVICES:**

A scientific calculator is required to complete homework assignments and tests in college algebra. Southaven High will provide TI-30XS.

Graphing calculators and calculators with a Computer Algebra  System and/or a QWERTY keyboard are not allowed during tests.

Cell phone calculators are also prohibited.

All cellular phones, pagers, and other electronic equipment should be turned off during class, during movies, in churches, in bookstores and restaurants, in elevators, and especially while operating a motor vehicle.

