**COURSE: COLLEGE ALGEBRA 4th Period**

**CAMPUS: Allen County-Scottsville High School**

**MEETING TIMES: Monday 10:10-10:50**

 **Wednesday 9:15-10:40**

 **Friday 9:15-10:40**

**INSTRUCTOR: Julie K. Shelton**

**OFFICE: Room 103**

**OFFICE PHONE: 270-622-4119, extension 2103**

**E-MAIL:** **Julie.shelton@allen.kyschools.us**

**OFFICE HOURS: after school, by appointment**

**I. TITLE: College Algebra, MTH 111, 3 semester hours**

**II. COURSE DESCRIPTION:**

This course is designed to bridge the gap between two years of high school algebra or MTH 100 to college level pre-calculus courses. This course is required for the mathematics major with teacher certification; however it will not count for credit toward the mathematics major (without teacher certification) or minor programs.

**III. TEXTBOOK:**

Larson, Ron. College Algebra, 8th Edition. Belmont, California: Brooks/Cole, 2010. (provided)

**IV. STUDENT LEARNING OBJECTIVES:**

1. **The student will** demonstrate the ability to think logically and critically*.* The course will emphasize *seven thinking strategies*: Monitor for Meaning, Access Background Knowledge, Ask Questions, Determine Importance, Create Sensory Images, Make Inferences, and Synthesize.

2. **The student will** be able to communicate mathematics in oral and written form.

3. **The student will** demonstrate quantitative literacy by interpreting, planning, and solving real world problems.

4**. The student will** demonstrate knowledge of the role of ethics in mathematical pursuits.

5. **The student will** be able to recognize functions and their graphs.

6**. The student will** demonstrate knowledge of the connection between algebra and geometry by studying analytic geometry.

7**. The student will** demonstrate knowledge of algebraic manipulation.

8. **The student will** demonstrate mathematical literacy through performance of the *EIGHT COMMON CORE STANDARDS FOR MATHEMATICAL PRACTICE:*

Make sense of problems and persevere in solving them.

Reason abstractly and quantitatively.

Construct viable arguments and critique the reasoning of others.

Model with mathematics.

Use appropriate tools strategically.

Attend to precision.

Look for and make use of structure.

Look for and express regularity in repeated reasoning.

**V. COLLEGE ALGEBRA TOPIC OUTLINE**

**Unit 1- Some basic Algebra Concepts- A review**

Exponents

Polynomials

Factoring Polynomials

Rational Expressions

Radicals

Relationship between exponents and Roots

Complex Numbers

**Unit 2- Equations, Inequalities, and Problem Solving**

 Linear Equations and Problem Solving

More Equations and Applications

Quadratic Equations

Applications of Linear and Quadratic Equations

Miscellaneous Equations

Inequalities

**Unit 3- Coordinate Geometry and Graphing**

 Coordinate Geometry

Graphing Techniques Linear Equations and Inequalities

Determining the equation of a line

More on Graphing

Circles

**Unit 4- Functions**

Concept of a function

Linear Functions and Applications

Quadratic Functions

More quadratic functions and applications

Transformations of some basic curves

Combining Functions

Inverse Functions

**Unit 5- Polynomial and rational Functions**

Dividing Polynomials

 Remainder and Factor Theorem

Polynomial Equations

Graphing Polynomial Functions

**\*\*Other s at the instructor’s discretion provided there is time.**

**VI. ASSESSMENT AND GRADING POLICY**

Your grade in this course will be based on unit tests, quizzes and special assignments, and a comprehensive final exam. A major test will be given at the end of each unit of study. Your grade will be based on the following weights:

Unit Exams = 65%, Quizzes and Graded Assignments = 25%, Final Exam = 10% of the final grade

The grading scale for this course is as follows:

A (90-100), B (80-89), C (70-79), D (60-69), F (below 60)

**VIII. COURSE REQUIREMENTS**

**Daily Materials for Class:**

1. Binder with loose paper and pocket folder/dividers - *used only for College Algebra*
2. Graph Paper
3. **GREEN** Two-Pocket Folder – *remains in the classroom*
4. Pencil

A TI-84 graphing calculator will be provided for you in class every day. You will need to have access **at home** to a calculator with trigonometric and logarithmic functions.

**BONUS OPPORTUNITY: Bring in a package of 4 or more AAA batteries before August 15th to earn 100% on your first quiz.**

**Attendance:**

This course will be taught at a relatively fast pace, consistent with other college mathematics courses. It is imperative that students be in attendance and actively involved in the learning process on a **daily** basis. Students should speak directly with the instructor upon returning from an absence. It is the student’s responsibility to find out about missed notes and assignments and to complete any missed work.

**ACS Homework Policy**:

Homework will be assigned almost every day. Assignments are to be completed by the next day of class. Complete and checked homework is the number one study source for tests and quizzes in this class, so do your best!!! Each student will have online access to the STUDENT SOLUTIONS MANUAL . The SSM has the complete step-by-step solution to every odd-numbered problem in the textbook. The online site also provides a “chat” format for interactive help. [www.calcchat.com](http://www.calcchat.com) This is a great resource if used correctly.

**Make-Up Work Policy**:

Students will be allowed to make up assignments for excused absences only. When you are absent, it is your responsibility to find out what work you have missed and how much time you will be allowed to make up the grade. Until work is completed, a zero will be entered into Infinite Campus.

**Classroom Rules:**

1. Respect other people and their property.
2. Take responsibility for your actions and words.
3. Follow all classroom procedures.
4. Be prepared.
5. Be prompt.
6. Stay on-task.
7. Talk when and how it is appropriate.
8. Follow all school-wide rules and procedures in the student handbook.