

# University Academy of Central Louisiana

Dear Parents and Students,

Welcome to Algebra II or Advanced Math! This is my thirteenth year teaching and my fifth year at University Academy and I'm excited about the opportunity to get to know you. I'm looking forward to a happy and productive school year.

**Students are asked to bring the following supplies to school the first week of school:**

- **One Binder** 1" to 1.5" for all class work. **Textbooks** will not be used for this class; therefore a notebook to organize daily handouts and assignments is required.
- **1 pack of copy paper**
- **Pencils** (All work must be in pencil)
- 1st Hour is asked to bring container of Clorox Wipes and a package of Pencils
- 2nd Hour is asked to bring a package box of Tissues and Hand Sanitizer
- It is recommended/**not required** to purchase a **Graphing Calculator** for this class. In class, examples will be done on the **TI-Inspire CX on the board**. If you decided to purchase one it is recommended that you purchase the TI-Inspire CX.
  - **Calculators will be available in the classroom.**

Attached is information on how the class will be graded, as well as class expectations and class policies.

I am excited about this new year and am committed to working with you to solve problems. I will promptly correct and offer feedback on your work. I will work with you to meet learning goals. I will offer extra help and alternative assessments should you require them.

Once again, welcome to Algebra II or Advanced Math.  
Let's work together to make this the best year ever!

Sincerely,

Kara Worsham  
Algebra II and Advanced Math  
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## How grades will be determined:

- Homework will be assigned for this class and graded. If a student does not have their homework fully attempted with work shown an **Incomplete** will be given and the assignment will be doubled. If the work is turned in the next day, full credit will be awarded. After this time the student will report to class for lunch detention until the assignment is completed for half credit.
- Each 9-weeks there will be **3 to 5 tests** given each worth 100-200 points. Any student will be allowed to **retake any test** within a given time frame if they have completed all assignments. The two grades will be averaged together and this is the grade that will be recorded. Several days before each test a **Sample Test** will be handed out. The day before the test will be designated for review and any questions can be asked regarding the Sample Test. A grade will be given for completion of the Sample Test.
- **Participation** in class is vital for learning. This means sharing your ideas, opinions, and answers and actively listening to others ideas, opinions, and answers. The more input you put into class, the more enjoyable it will be.

Grade Scale	
Grade	Percentage
A	100-90
B	89-80
C	79-70
D	69-60
F	59-0

- Grades will be based on **total accumulation** of points throughout the 9-week period.
- Work turned in to be graded should be on loose-leaf paper and written in pencil.
- Please note that **Attendance** is very important!!! When you miss class you miss content.

**If you need help please ask. I am available most days after school for extra help. I want everyone to be successful!!!!**

## Missing Class

If a student is present the day a test is announced and again on the test day, he/she will take the test even if he/she is absent the day before the test.

- Students who miss class because of a school-sponsored event must turn in homework and get assignments **prior** to the absence. Students who will miss a test for such reasons must make arrangements **before the absence** to take the test.
- Students who miss a test will take a make-up test at the teacher's convenience. The make-up test may not be the same test as taken by the rest of the class.
- **Communication is the key**, if you communicate with me prior to planned absences, or immediately after unplanned absences I will work with you.

### **Classroom Expectations**

**Be Respectful:** *Be respectful of yourself, your environment, your fellow classmates, and your teacher. Speak in a normal tone of voice, and listen attentively. Be honest and ethical, and practice strong moral values. Treat others the way you want to be treated.*

**Be Responsible:** *The Oxford Dictionary defines responsible in this way: “Liable to be called into account. Morally accountable for one’s action...” Act rationally; choose wisely. Recognize your own role in building a fun and productive community of learners. Understand there will be consequences, both good and bad, for your actions.*

**Be A Worker:** *Do your job! Challenge yourself to be productive. Be prompt. Be ready to learn when class begins and have materials ready. Turn in work on time, and always do your best. You are here; use your time wisely.*

**Be Cooperative:** *Time and again you will be asked to do something that you may not like or think is worthless. Be mature; work through it. You may find that “getting there” is half the fun. Our world demands that you work well with others, offer to help. Honor the ideas and opinions of others. Think – choose wisely.*

### **Class Policy and Routine**

- Be on time and seated in your assigned seat on time.
- Be prepared: pencil, paper, calculator, assignments, etc.
- Vulgar and offensive language will not be tolerated.
- The teacher’s desk, tables, cabinets, and closet are off-limits unless given permission.
- Ask questions when you do not understand!!!
- Inappropriate conduct will be documented on a discipline form and reported to the office.

# Advanced Math Syllabus

## Unit 1

- Linear Equations & Absolute Value Equations
- Exponents and Polynomial Operations
- Factoring Polynomials
- Rational Expressions
- Radicals and Rational Exponents
- Complex Numbers
- Quadratic Equations

## Unit 2

- Functions Review
  - Representing Relations (Tables, Mappings, Graphs, Equations)
  - Domain and Range
  - Relations vs. Functions
  - Function Notation & Evaluating Functions
- Intercepts; Zeros; Critical Points (Extrema & Points of Inflection); Increasing & Decreasing Intervals
- Continuity; End Behavior
- Tests for Symmetry; Even and Odd Functions
- Average Rate of Change
- Parent Functions & Transformations
- Graphing Functions
- Function Operations & Compositions of Functions
- Inverse Relations & Functions

## Unit 3

- Zeros of Polynomials, Linear Factors, and Multiplicity
- Dividing Polynomials
- Remainder and Factor Theorems
- Rational Zero Theorem; Find Rational Zeros

## Unit 4

- Compound Interest & Continuous Compound Interest
- Logarithms: Converting between exponential and logarithmic forms, Common Logarithm, Natural Logarithm  
Evaluating Logs, Change of Base formula
- Properties of Logarithms, Condensing and Expanding Logarithms
- Solving Exponential Equations (using a common base)
- Solving Logarithmic Equations
- Solving Exponential Equations using Logs
- Review Logarithmic & Exponential Equations
- Applications with Solving Equations

## Unit 5 and Unit 6

- Standard Form of an Angle; Degrees vs. Radians, Co-terminal Angles; Degree-Minute-Second Form
- Arc Length and Area of Sectors
- Circular Motion: Linear and Angular Speed
- Six Trigonometric Functions (sin, cos, tan, csc, sec, cot);

- Trigonometric Values in Special Right Triangles
- Finding Side & Angle Measures; Solving Right Triangles;
- Applications
- Trigonometric Functions for Any Angle;
- Reference Angles & The Unit Circle
- Law of Sines
- Law of Cosines
- Mixed Law of Sines and Law of Cosines; Area of Triangles
- Sum and Difference of Angles Identities
- Solving Trigonometric Equations: Basic Algebraic Methods & Factoring)
- Graphing Sine, Cosine, and Tangent Functions
- Translating Sine, Cosine, and Tangent Functions (horizontal/phase shifts and vertical shifts)

**If time allows:**

- Basic Trigonometric Identities: Reciprocal, Quotient,
- Pythagorean, Cofunction, and Even-Odd
- Simplify and Rewrite Trigonometric Expressions
- Proving Trigonometric Identities (with Basic Identities)
- Graphing Reciprocal Functions
- Compositions of Trigonometric Functions