

# Algebra 2 Syllabus Outline

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**Lake Dallas High School**

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Dear Parents and Guardians,

Welcome to Algebra 2 at Lake Dallas High School! This syllabus outlines the course plan for your child's class this semester, including key topics, expectations, and how you can support their success. As required by Texas law (Senate Bill 12), this document serves as the instructional plan and is available for your review. I look forward to working with you and your child!

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## Contact Information

- **Teacher:** Courtney Guthrie
  - **Email:** cguthrie@ldisd.net
  - **Conference Time:** 1:25-2:10 Monday–Friday
  - **Best Way to Reach Me:** Email or call the school office. I'll respond within 24 hours on school days.
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## Course Overview (Instructional Plan)

This semester, your child will study the following topics in Algebra 2, based on Texas state standards (TEKS):

### 1. Unit 0: Foundations of Algebra

- TEKS Addressed: 2A.1A, 2A.1B, 2A.1E (preparation for Alg. 2 coursework), 2A.8A, 2A.8B, 2A.8C
- Learning objectives:

Simplify algebraic expressions.  
Solve multi-step equations.  
Solve and graph linear inequalities.  
Graph functions from tables  
Write linear equations using points and slope  
Apply linear equations in real world context

- Activities: Practice problems, review activities, unit choice board, unit test

## **2. Unit 1: Absolute Value Functions and Equations**

- TEKs Addressed: 2A.1A, 2A.6C, 2A.6D, 2A.6E, 2A.6F, 2A.7I
- Learning objectives:
  - Describe transformations of absolute value functions
  - Determine the domain and range of an absolute value function
  - Evaluate absolute value expressions.
  - Solve absolute value equations
  - Solve and graph absolute value inequalities
  - Apply absolute value equations and inequalities in context.
- Activities: Practice problems, Desmos activity, around the room activity, review, test, unit choice board.

## **3. Unit 2: Systems of Equations**

- TEKs Addressed: 2A.3A, 2A.3B, 2A.3E, 2A.3F, 2A.3G
- Learning objectives:
  - Solve systems with substitution, elimination, and matrices.
  - Graph systems of linear inequalities and test solutions for the systems,
  - Apply systems in context.
- Activities: Practice problems, practice activities, unit choice board, review, test

## **4. Unit 3: Quadratic Functions**

- TEKs Addressed: 2A.4A, 2A.4B, 2A.4C, 2A.4E, 2A.4H, 2A.8C
- Learning objectives:
  - Describe transformations of quadratic functions
  - Analyze all characteristics of quadratic functions (concavity, axis of symmetry, vertex, minimum/maximum, x- and y-intercepts, domain, range, and intervals of decreasing/increasing),
  - Graph quadratic inequalities,
  - Model quadratic inequalities.
- Activities: Practice problems, practice activities, unit choice board, review, test

## 5. Unit 4: Quadratic Equations

- TEKs Addressed: 2A.4D, 2A.4F, 2A.7A
- Learning objectives:
  - Solve quadratic equations by graphing.
  - Solve quadratic equations algebraically.
  - Define and use the imaginary unit  $i$ .
  - Add, subtract, and multiply complex numbers.
  - Solve quadratic equations using the Quadratic Formula.
  - Analyze the discriminant to determine the number and type of solutions.
  - Solve quadratic equations by completing the square.
- Activities: Practice problems, practice activities, unit choice board, review, test

## 6. Additional Skills

- Developing critical thinking, note-taking, error analysis, decision making, communication, making connections and time management.
- Example: Preparing for a unit test, tracking progress towards their goals, choice of activities, explaining steps and finding errors,

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Thank you for supporting your child's education! Feel free to contact me with questions.

Sincerely,  
Courtney Guthrie