



# NORTHGATE ACADEMY

## Algebra II - Course Syllabus

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### Description:

Providing further insight into advanced algebraic concepts, this two-semester course serves as an extension of Algebra I. Algebra II develops students' ability to manipulate and use matrices in various formats to determine data relationships and also delve into function types such as polynomial, logarithmic, quadratic, exponential, and rational and periodic. High school level students will have the skills needed for state standardized tests and national exit exams upon completion of the course.

**Textbook:** Algebra II Techbook – Discovery Education

### Course objectives:

Throughout the course, you will meet the following goals:

- Identify similarities between the real and complex number system.
- Recognize all functions as mappings between domain and range sets.
- Understand that linear and quadratic functions are a subset of polynomial functions.
- Model real-world problems using polynomial and transcendental functions.
- Apply advance probabilistic methods to make decisions, and perform statistical analysis.
- Incorporate technology in modeling and solving problems.

### Contents:

#### Semester A

Unit 1: Recursive, Explicit, and Inverse Functions  
Unit 2: Exponents and Logarithms  
Unit 3: Real and Complex Solutions  
Unit 4: Conic Sections  
Unit 5: Multivariate Equations and Inequalities  
Unit 6: Polynomial Expressions and Equations

#### Semester B

Unit 7: Rational Expressions and Equations  
Unit 8: Rational Functions  
Unit 9: Trigonometry  
Unit 10: Probability  
Unit 11: Data Modeling

### Grading Scale

A = 90-100%  
B = 80-89%  
C = 70-79%  
D = 60-69%  
F = under 59%

### Grade Weighting

Chapter Quizzes..... 70%  
Cumulative Exam ..... 30%  
100%