Experiential education for young people promoting the natural world and the betterment of human character.

Fall Semester Algebra II

To be completed by the Student and their Algebra II Teacher

Student's Name: _____ Semester attending OA: _____

Algebra II Teacher's Name: _____

Algebra II Teacher's Signature: _____

Phone Number: _____ Fax Number:_____

Email address: _____

To the teacher: The topics below are those usually offered in this course at OA. Please check the topics that align with your class and write in any additional topics needed under each unit. Specific examples and assessment questions are also very helpful and may be attached to this form. Thank you so much for your time! This will help us ensure a smooth transition for your student between our schools.**Prerequisite topics include integers, the algebraic properties, manipulating equations, solving linear equations, graphing linear equations, factoring and foiling expressions, and creating algebraic models.*

Name of Course: _____

Textbook used for this course: _____ Edition: _____

Publisher: _____

Unit 1: Linear Equations and Functions

- ❑ Real Numbers, Number Operations, Algebraic Properties Review
- ❑ Algebraic Expressions, Rewriting Equations and Formulas, Models
- ❑ Functions
- ❑ Slope and Rate of Change
- ❑ Solving Linear Equations
- ❑ Graphs
- ❑ Equations
- ❑ Writing Equations of Lines
- ❑ Problem Solving with Models
- ❑ Solving Linear Inequalities
- ❑ Piecewise Functions and Absolute Value Functions
- ❑ Additional Topics*(Correlation, Line of Best Fit)*:

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Unit 2: Systems of Linear Equations and Inequalities

- ❑ Solving Systems of Linear Equations
- ❑ Graphing
- ❑ Algebraically- Substitution, Elimination, Combination
- ❑ Problem Solving with Models
- ❑ Linear Equations in Three Variables
- ❑ Graphing
- ❑ Solving Systems
- ❑ Additional Topics *(Linear Programming):*

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Unit 3: Matrices and Determinants

- ❑ Matrix Operations- Addition, Subtraction, Multiplication
- ❑ Determinants and Cramer's Rule
- ❑ Identity and Inverse Matrices
- ❑ Solving Systems using Inverse Matrices
- ❑ Additional Topics:

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Unit 4: Quadratic Functions

- ❑ Graphing Quadratics
- ❑ Solving Quadratics by Factoring, Finding Square Roots, and Completing the Square
- ❑ Complex Numbers
- ❑ The Quadratic Formula and the Discriminant
- ❑ Modeling with Quadratics
- ❑ Additional Topics *(Quadratic Inequalities)*:

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Unit 5: Polynomials and Polynomial Functions

- ❑ Using Properties of Exponents
- ❑ Graphing Polynomial Functions
- ❑ Adding, Subtracting, and Multiplying Polynomials
- ❑ Factoring and Solving Polynomial Equations
- ❑ The Remainder and Factor Theorems
- ❑ Finding Rational Zeros
- ❑ The Fundamental Theorem of Algebra
- ❑ Modeling with Polynomial Functions
- ❑ Additional Topics:

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Unit 6: Powers, Roots, and Radicals

- ❑ Nth Roots and Rational Exponents
- ❑ Properties of Rational Exponents
- ❑ Power Functions and Function Operations
- ❑ Inverse Functions
- ❑ Square Roots and Cube Roots Functions
- ❑ Solving Radical Equations
- ❑ Additional Topics*(Statistics- Central Tendency and Dispersion, Standard Deviation)*:

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Please list any additional concepts needed that do not fit into the units above:

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Please return this form to our office <u>AS SOON AS POSSIBLE</u>. We are unable to guarantee any curriculum needs at OA without completed academic forms.

Form may be mailed to: The Outdoor Academy
43 Hart Road, Pisgah Forest, NC 28768
Faxed to: (828)884-2788 or Emailed to: admissions@enf.org