



## Course Syllabus

Algebra II / Trigonometry | Fall 2021 - Spring 2022

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**Objective:** Algebra II/Trigonometry is offered this school year, and will cover concepts ranging from quadratic equations to trigonometric functions and identities. Lectures will emphasize problem solving; students will work on solving Alg II/Trig problem sets with real-world applications. The course is designed to be a full Algebra II/Trigonometry prep course, and will focus on developing critical-thinking skills in mathematics.

**Prerequisites:** Algebra 1 and Geometry

**Instructor Contact Information:** Ms. Joy Suh: [joy.suh@fremontstem.com](mailto:joy.suh@fremontstem.com)

**Class Times:** Tuesday: 5:00 - 6:30 pm.

Fall Semester: 8-29-2021 to 1-8-2022

Spring Semester: 1-9-2022 to 6-3-2022

- Thanksgiving Break: no class between 11-20-2021 and 11-27-2021.
- Winter Break: no class between 12-23-2021 and 1-8-2022.
- Spring Break: no class between 4-15-2022 and 4-23-2022.

**Required Materials:**

- Note-taking materials: graph paper notebook or pad
- Scientific calculator
- Writing utensils (pencil, eraser, sharpie, colored markers)
- Binder or folder

**Program:** \$475 per semester

Note: the full program cost is due on the first day of lecture, either in person (cash/check) or via Paypal online. If the student for some reason must miss the first day, the fees must be paid by the first attended lecture. The program fee is non-refundable unless unexpected and severe circumstances arise.

**Books and Course Material:** This course will use Larson and Boswell's [Big Ideas Math Algebra 2](#) (ISBN 978-1-60840-840-5) which may be viewed [here](#). Additional materials will be made accessible through Google Classroom. The Big Ideas Student Journal will be available as pdfs, but you may wish to purchase a physical copy for yourself (available on ebay, Half Price Books, etc.)



**Google Classroom:** We will be using Google Classroom for class communications, announcements, assignments, grades, materials, questions, and math memes.

**Additional Help:** Questions may be posted to the Google Classroom or sent via email. Asking questions is one of the best ways to learn, so feel free to ask.

**Homework:** This course will be rigorous and move at a fast pace in order to complete all standard material. Homework will be assigned weekly and will include a range of computational and application problems. The purpose of homework is practice, and is therefore ungraded. Access to solutions is available online, so that you may immediately check for understanding. Complete your homework each week, and you will do well in the final exam.

**Notes:** Note-taking is invaluable for processing the material, and helps with retention and review.

**Activities:** We will use activities to keep students engaged with their learning. Activities may include task cards, matching, card sorts, quick checks, scavenger hunts, and escape rooms.

**Quizzes:** Any quizzes will be scheduled with a minimum of a week's notice. Solutions will be made available afterwards.

**Final Exam:** Each semester, a comprehensive final exam will be administered on the second to last day of class. Corrected exams with feedback will be returned and discussed in the final lecture.

**Tentative Nature of the Syllabus:** The contents of this syllabus and attached schedule are tentative in nature and may be subject to change or revision. The instructor holds the right to make changes to the schedule and/or organization of the class as necessary. Students and parents will be notified of any changes via email.

**Special Accommodations:** If you require special accommodations, please notify the instructor as soon as possible.

### ***Tentative Schedule***

Date	Lesson	Topic
8/31/21	Lecture 1: 1.1, 1.2	Parent Functions and Transformations Transformations of Linear Functions
9/7/21	Lecture 2: 1.3, 1.4	Modeling Linear Systems Solving Linear Systems
9/14/21	Lecture 3: 2.1, 2.2, 2.3	Transformations of Quadratic Functions Characteristics & Features of Quadratic Function
9/21/21	Lecture 4: 2.4, 3.1	Modeling with Quadratics Solving Quadratic Equations
9/28/21	Lecture 5: 3.2, 3.3, 3.4	Complex Numbers Completing the Square Quadratic Formula
10/5/21	Lecture 6: 3.5, 3.6	Solving Nonlinear Systems Quadratic Inequalities
10/12/21	Lecture 7: 4.1, 4.2, 4.3	Graphing Polynomial Functions Operations with Polynomials
10/19/21	Lecture 8: 4.4, 4.5	Factoring Polynomials Solving Polynomial Equations
10/26/21	Lecture 9: 4.6, 4.7	The Fundamental Theorem of Algebra Transformations of Polynomial Functions
11/2/21	Lecture 10: 4.8, 4.9	Analyzing Graphs of Polynomial Functions Modeling with Polynomial Functions
11/9/21	Lecture 11: 5.1, 5.2	$n$ th Roots and Rational Exponents Properties of Rational Exponents and Radicals
11/16/21	Lecture 12: 5.3, 5.4	Graphing Radical Functions Solving Radical Equations and Inequalities
11/23/21	<b>Thanksgiving Break</b>	
11/30/21	Lecture 13: 5.5, 5.6	Performing Function Operations Inverse of a Function
12/7/21	Lecture 14	Review
12/14/21	Lecture 15	Semester Final Exam
12/21/21	Lecture 16	Review Semester Final Exam
12/28/21	<b>Winter Break</b>	

### *Tentative Schedule*

Date	Lesson	Topic
1/4/22	<b>Winter Break</b>	
1/11/22	Lecture 17: 6.1, 6.2, 6.3	Exponential Growth and Decay Natural Base $e$ Logarithms and Logarithmic Functions
1/18/22	Lecture 18: 6.4, 6.5, 6.6	Transformations of Exponential and Logarithmic Functions Properties of Logarithms Solving Exponential and Logarithmic Equations
1/25/22	Lecture 19: 6.7, 7.1, 7.2	Modeling with Exponential and Logarithmic Functions Inverse Variation Graphing Rational Functions
2/1/22	Lecture 20: 7.3, 7.4, 7.5	Operations on Rational Expressions Solving Rational Equations
2/8/22	Lecture 21: 8.1, 8.2, 8.3	Defining and Using Sequences and Series Arithmetic & Geometric Sequences and Series
2/15/22	Lecture 22: 8.4, 8.5	Finding Sums of Infinite Geometric Series Recursive Rules with Sequences
2/22/22	Lecture 23: 9.1, 9.2	Right Triangle Trigonometry Angles and Radian Measures
3/1/22	Lecture 24: 9.3	Trigonometric Functions of Angles
3/8/22	Lecture 25: 9.4, 9.5	Graphing Trigonometric Functions
3/15/22	Lecture 26: 9.6	Modeling with Trigonometric Functions
3/22/22	Lecture 27: 9.7, 9.8	Trigonometric Identities Sum and Difference Formulas
3/29/22	Lecture 28: 10.1, 10.2	Sample Spaces and Probability Independent and Dependent Events
4/5/22	Lecture 29: 10.3, 10.4	Two-Way Tables and Probability Disjoint and Overlapping Events
4/12/22	Lecture 30: 10.5	Permutations and Combinations
4/19/22	<b>Spring Break</b>	
4/26/22	Lecture 31: 10.6, 11.1	Binomial & Normal Distributions



5/3/22	Lecture 32: 11.2, 11.3, 11.4	Populations, Samples, and Hypotheses Collecting Data & Experimental Design
5/10/22	Lecture 33: 11.5, 11.6	Inferences from Sample Surveys and Experiment
5/17/22	Lecture 34	Review
5/24/22	Lecture 35	Semester Final Exam
5/31/22	Lecture 36	Review Semester Final Exam

Note: Lecture days are subject to change should unexpected circumstances arise.