Reseda High School
Police Academy Magnet
CC Algebra 2 A/B
Instructor: Mr. Ethington

Course Description:
In Common Core Algebra 2 A/B, while integrating *law and law enforcement themes*, we will expand students' knowledge gained in CC Algebra 1 and CC Geometry, and prepare students with the skills they need to delve into higher math. We will also develop logical thought processes with emphasis on reasoning and logical arguments. We will be using the SpringBoard program of instruction.

Topics of Instruction:
Unit 1: Equations, Inequalities, and Functions
Creating Equations in One Variable
Creating Equations in Two Variables
Absolute Value Equations and Inequalities
Graphing Two-Variable Equations
Graphing Systems of Inequalities
Solving Systems of Two Equations in Two Variables
In Hot Pursuit
Solving Systems of Equations in Three Variables
Minimizing officer risk
Piecewise Functions
Step-Functions and Absolute Value Functions
Transforming Absolute Value Functions
Operations with Functions
Function Composition
Following the Proper Protocols
Inverse Functions
Graphing Inverse Functions

Unit 2: Quadratic Functions
Analyzing a Quadratic Function
Factoring Quadratic Expressions
Key suspects method
Solving Quadratic Equations by Factoring
The Scales of Justice
More Uses for Factoring
Imaginary Numbers
Operations with Complex Numbers
Factoring with Complex Numbers
Completing the Square and Taking Roots
The Quadratic Formula

Solutions of Quadratic Functions
Parabolas and Quadratic Equations
Writing Quadratic Functions from Data
Quadratic Regression
Translating Parabolas
Shrinking, Stretching, and Reflecting Parabolas
Vertex Form
Dissecting Quadratic Functions
Graphing Quadratic Functions
Path of a bullet in flight
The Discriminant
Graphing Quadratic Inequalities
Solving Systems of Linear and Nonlinear Equations Graphically
Solving Systems of Linear and Nonlinear Equations Algebraically

Unit 3: Polynomials
Polynomials, an Introduction
Attributes of Polynomial Functions
Even and Odd Functions
Adding and Subtracting Polynomials
Multiplying Polynomials
Dividing Polynomials
Pascal's Triangle
Applying the Binomial Theorem
Algebraic Methods of Factoring Polynomials
The Fundamental Theorem of Algebra
Converse of Key suspects method
Graphing Polynomial Functions
Finding Roots of Polynomial Functions
Comparing Polynomial Functions

Unit 4: Series, Exponential, and Logarithmic Functions
Arithmetic Sequences
Arithmetic Series
Sigma Notation
Geometric Sequences
Geometric Series
Convergence of Series
Exploring Exponential Patterns
Exponential Functions
Exponential Graphs and Asymptotes
Transforming Exponential Functions
Natural Base Exponential Functions
Using Exponential Data
Exponential decay to solve cold cases
Common Logarithms
Properties of Logarithms
Logarithms of Any Base
Logarithm Change of Base Formula
Graphs of Logarithmic Functions

Exponential Equations
Solving Equations by Using Logarithms
Time of death by body temperature
Logarithmic Equations
Exponential and Logarithmic Inequalities

Unit 5: Radical and Rational Functions
Square Root Functions
Solving Square Root Equations
Cube Root Functions
Solving Cube Root Equations
Square Root Functions and Regressions
Information from Skid marks
Square Root and Quadratic Functions
Cube Root and Cubic Functions
Formulating and Graphing a Rational Function
Identifying Asymptotes
Inverse Variation and Combined Variation
Transformations of Rational Functions
Multiplying and Dividing Rational Expressions
Adding and Subtracting Rational Expressions
Finding Horizontal and Vertical Asymptotes
Graphing Rational Functions
Solving Rational Equations
Solving Rational Inequalities

Unit 6: Probability and Statistics
Shapes of Distributions
Characteristics of the Normal Distribution
z-scores and their Probabilities
Modeling with the Normal Distribution
Using Surveys
Using Experiments
Observational Studies
Devising Simulations
Maximizing the deterrent effect of laws and law enforcement
Confirming Data with Simulations
Computing Margin of Error
Random Choice
Testing Statistical Significance
Evaluating the efficacy of laws

Grading
Grade cutoffs used are as follows, A: 89.5% and up, B: 79.5% to 89.4%, C: 69.5% to 79.4%, D: 59.5% to 69.4%, F: 59.4% and below.

Attendance, Cooperation and Work Habits

You are required to follow the attendance policy of the school. Your attendance will have a direct connection to your semester grade. Attending class is very important, especially with the institution of the 4 by 4 block schedule. Absent students will miss opportunities to receive in class participation and classwork points. In order to be successful, you must attend class on a regular basis. Exams and quizzes must be made up the day you return to school.

Cooperation and respect are expected at all times. Compliance with school and classroom rules is required. Deviation from behavior requirements will result lowered cooperation marks and potentially in class suspension.

Assignment Types

Student grades will be determined using students' demonstrations of knowledge of the subject by tests, in class assignments, homework, quizzes, SpringBoard assignments, and other assessments as determined to be needed by the teacher, as well as the Midterm and Final Exam at the end of each mester, and using student in class participation as follows:

Tests, Assignments, and other assessments -	75%
Midterm/Final Exam -	20%
Participation -	5%

Timely, thorough and contemplative completion of all assignments is necessary for successful completion of the class. If assignments are not completed and submitted in a timely, thorough and contemplative manner, there will be an immediate and direct impact on both the Academic grade, as well as the Work Habits grade for the class.

Classwork/Homework and Cheating Policy

All classwork and homework will be assigned during class, and is due the next day of class. All classwork not finished in class is to be completed for homework. Unfinished assignments may impact students' Theoretical Work grades, or Application Work grades, and neglect of in class assignments will impact participation grades as well. All student work must be that of the individual student. CHEATING of any type will not be tolerated. This applies to ANY and ALL assignments. Any incidence of cheating will result in parent conferencing, a zero on the assignment (for all students(s) involved) and a "U" in both work habits and cooperation on all report cards in addition to the consequences outlined in the cheating policy of the student's magnet or by Reseda High School.

Pacing

It is very important to note that both sections of CC Algebra 2 are completed in one semester instead of an entire year, but the standards and requirements of this class are not reduced. This requires a very aggressive pacing, and necessitates that the class progresses very quickly, and that the students work diligently and tirelessly throughout the entire semester. The pacing of this class can be difficult, and it is very important that both students and parents are committed to being successful.

Contact and Website

A class website is maintained at ethingtonsclass.weebly.com. Non-SpringBoard assignments will be available here, as well as a calendar for the class. The best way of contacting me is via email at lhe7822@lausd.net .

Please read the section below, sign, tear off, and return to teacher.

I have read the policies and expectations for the CC Algebra 2 A and B classes and understand them. If I choose not to meet these expectations, I am willing to accept the consequences. I also understand that unlike other Algebra 2 classes, this class is completed in only one semester, and that extra time and energy will be necessary to be successful.

Student Printed Name: _____

Student Signature: _____ Date: _____

Parent/Guardian Printed Name: _____

Parent/Guardian Signature: _____ Date: _____

Parent/Guardian: If you have an email address you would like the teacher to use to communicate with you about your child's progress, please include it here:

_____

Comments/Concerns: