Free Vallejo Public Independent Charter Schools
2 Positive Place, Vallejo, California, 94

Core Connections Algebra 2
Mr. Chris Lumanglas   Mr. Peter Ede
clumanglas@mitacademy.org   pede@mitacademy.org
SY 2019-2020

Overview of Algebra 2
Algebra 2 is a year-long college-preparatory level course. Algebra 2 is the third course in a sequence of five courses that starts with Algebra 1 and continues through Calculus. Algebra 2 applies and extends what students have learned in previous courses by focusing on finding connections between multiple representations of functions, transformations of different function families, finding zeros of polynomials and connecting them to graphs and equations of polynomials, modeling periodic phenomena with trigonometry and understanding the role of randomness and the normal distribution in making statistical conclusions.

Course Text
The primary text in this course is Kysh, Baldinger, Kassarjian. *Core Connections: Algebra 2*. Second Edition, Sacramento: CPM Educational Program, 2010.

This text emphasizes that true understanding requires more than one method or one way of looking at something. Students will be expected to learn concepts through numerical analysis, graphical analysis, analytic/algebraic analysis and especially verbal/ written analysis. Students will integrate these modes of analysis to build a strong conceptual framework for solving both purely mathematical as well as contextual problems. Major topics are developed over the timeframe of this entire course.

The CPM curriculum, as well as this class, emphasizes student-centered project based learning (PBL). Students will work in study teams to discover concepts through solving rich and project-like problems. This experience of discovering advanced algebra will be reinforced through lecture and Cornell notes, learning logs, and further projects. Students should expect to communicate and support their study team members to create solutions to problems that can be presented with clear reasoning and analytic tools.

Semester 1
Chapter 1 Investigations and Functions
Chapter 2 Transformations of Parent Graphs
Chapter 3 Equivalent Forms
Chapter 4 Solving and Intersections
Statistics

Semester 2
Chapter 5 Inverses and Logarithms
Chapter 6 3-D Graphing and Logarithms
Chapter 8 Polynomials
Chapter 7 Trigonometric Functions

GRADING POLICY
Standards-Based Grading

Grade	Description		Grading Scale	
4.0	Mastered	100	**A**	**90-100**
3.5	Mastered	95-99	**B**	**80-89**
3.0	Proficient (Meets Expectations)	90-94	**C**	**70-79**
2.5	Approaching Proficient	80-89	**F**	**<70**
2.0	Basic Proficiency	70-79		
1.5	Basic with Help	65-69		
1.0	Basic with Help	60-64		
0	No skill demonstrated	50-59		

Course Goals

In order to receive credit for algebra 2, students will be expected to accomplish the following goals:

- Visualize, express, interpret and describe and graph functions (and their inverses). Given the graph, students will be able to represent the function with an equation, and vice versa, and transform the graph, including those that can be classified in the following families: linear, quadratic, polynomial, exponential, absolute value, logarithmic, trigonometric, rational and piecewise.
- Use variables and functions to represent relationships given in tables, graphs, verbally stated problems, and geometric diagrams and recognize the interconnection between these multiple representations.
- Apply the use of multiple representations to model and solve problems presented as real world situations or simulations from such subject areas as economics, biology, chemistry and physics.
- Solve linear or quadratic equations in one variable, mixed systems in two variables, and linear systems of equations in three or more variables, including solving with graphical methods.
- Use order and equivalence properties of algebra to rewrite complicated algebraic expressions and equations in more useful forms.
- Rewrite rational expressions
- Perform arithmetic operations on polynomials
- Understand the relationship between zeros and factors of polynomials
- Perform operations with complex numbers and solve quadratic equations with complex solutions.

Technology Requirement

Each student is required to use a scientific calculator. Texas Instruments TI83+ Graphing Calculator or similar model is recommended. The calculator is a key component of this course which will be used to explore concepts, graph functions, solve equations, explore differentiability and establish relations between data, equations and graphs.

Course Components and Expectations

Core Problems: Each section will consist of one to five core problems. These problems are absolutely necessary to discovering the ideas of algebra. These problems always require working in study teams and often require persistence in problem solving and using multiple analytic tools and strategies.

Assessments: Students will demonstrate mastery of the course goals through a variety of assessments. There will be periodic announced and unannounced quizzes. Each unit will culminate in a summative assessment. Retakes of standards are allowed.

Interactive Notebook All of the above work is to be maintained. There will be periodic, announced notebook checks.

Supplies needed for class

All supplies, materials and equipment needed for students to participate in MIT Academy's educational activities shall be provided to students by the school free of charge. However, a student may obtain required materials independently, in which case they get to keep them; whereas those students who receive materials from MIT may be charged a fee for the replacement of damaged, defaced, or unreturned school supplies.

- pencils/pens
- highlighters
- expo markers
- color pencils
- graph paper
- notebook
- calculator

Responsibility

There is much responsibility put on each of you to complete your assignments and to ask questions. In this classroom, everyone has a job to do. It is the job of the student to master the material and demonstrate this understanding by the end of the course. My job is to help you do your job. You also have a responsibility to provide an atmosphere of respect for everyone. I will make every reasonable effort to help you succeed. I look forward to a great year together*!*

The Key to Success

Good note taking and regular classwork completion correlate highly with a successful student. In other words, when a student takes notes and completes all the work, he or she will be successful in this class. ***AIM HIGH!***

Free Vallejo Public Independent Charter Schools
2 Positive Place, Vallejo, California, 94589 707-552-6482 www.mitacademy.org

Course: Algebra 2   **Teacher:** Lumanlas/Ede

I have read the course syllabus, and I have shared its contents with my parents. Furthermore, I am aware of the grading policy that will form the basis of my evaluation and how my grade will be computed. I am aware that homework is an extension of the regular classwork, and will be counted as a part of my overall evaluation. I realized that I am required to maintain a binder containing all notes, classwork, homework, and other assignments.

_____ I have read the expectations, and I am aware of what is expected of me to successfully complete this class.

Student Signature: _____

Parental support is requested to make sure that all assignments are completed and turned in on time. Parents are also asked to sign below, indicating that they have read this sheet and the course syllabus.

Child's Name: _____ Class Period: _____
Date: _____

_____ I have read the expectations, and I am aware of what is expected of my child to successfully complete this course.

_____ I have read the expectations, and I would like to discuss them further.

Parent(s) Name & Signature _____
Contact number/s _____
Email _____

☺ **Let's all work together to make this a great year!!!** ☺