

Monte Vista Christian School
Math 2320, Algebra 2
Course Syllabus

Course Description:

A review and extension of computational, procedural, reasoning, and problem solving skills taught in Algebra 1 and Geometry. It strengthens algebra skills, further develops the concept of a function, and expands upon trigonometric functions in preparation for higher education. Students will deal with real-life applications and must communicate orally and symbolically about mathematics. This course also allows students to see how mathematics fits within the larger narrative of Scripture and how God's perfect plan is displayed in nature and the world around us.

Curricular Mapping:

This course will continue to develop students' algebraic and problem solving abilities. It will build on the topics learned in Algebra 1 and Geometry as well as prepare students for Precalculus.

Course Objectives:

Upon the successful completion of this course the student will be able to:

1. Understand function notation and operations like composition and inverse functions
2. Graph, factor, and solve quadratic equations
3. Solve systems of equations with 2 or 3 variables, using graphs, substitution, elimination, or matrices
4. Perform polynomial operations including factoring and working with rational expressions
5. Perform operations involving complex numbers, finds conjugates, and graphs complex numbers
6. Graph and solve logarithmic and exponential equations, including using basic properties to simplify equations
7. Find the general term and sums of arithmetic and geometric series
8. Recognize and graphs the conic sections centered on the origin
9. Find the probability of an event by using permutations and combinations, the binomial theorem, and independent/dependent probabilities

Text:

HMH Fuse: Algebra 2 Common Core Edition for the iPad

Algebra 2 Text Instructions:

1. Download the App called HMH Fuse: Algebra 2, from the App Store, on the iPad. (The initial download is free.)
2. You must then buy the textbook as an in-App purchase, for a total of \$19.99.
3. Due to the fact that this text takes up a lot of memory, instructions on how to download chapters as well as which chapters to download will be given in class.

Course Outline:

Unit One: Linear Functions

Unit Two: Quadratic Functions

Unit Three: Polynomial Functions

Unit Four: Rational and Radical Functions

Unit Five: Exponential and Logarithmic Functions

Unit Six: Properties and Attributes of Functions

Unit Seven: Conic Sections

Unit Eight: Sequences and Series

Unit Nine: Probability

Unit Ten: Data Analysis and Statistics

Unit Eleven: Trigonometric Functions

Grading:

<u>Grade Book Categories</u>		<u>Semester Weighted Grading Configuration</u>	
Classwork/Projects	15%	Quarter	40%
Homework Assignments	20%	Quarter	40%
Quizzes	25%	Final Exam	20%
Tests	40%		

Homework Assignments

- Students should expect to complete 30 minutes of homework per night. Completion of the daily homework is necessary to solidify the learning of the concept taught in class that day and to prepare students for the lesson the following day.
- In order to receive full credit on an assignment, a student must
 - Turn the assignment in on time.
 - Attempt all of the assigned problems in pencil.

- Show all work.
- Complete all graphing problems on graph paper.
- Include first and last name, date, period, and the assignment in the heading.

Exams

- Being absent one day before a test/quiz does not excuse a student from taking that test/quiz along with the rest of the class. If a student is absent the day of a test/quiz, he/she will be expected to make up that test/quiz on the day he/she returns to class.
- If scientific calculators are allowed on a test or quiz day, then they may not be shared.
- Graphing calculators are not required and are not allowed on tests or quizzes.
- iPads, iPods, and cell phones are not allowed to be used as a calculator while in class.
- Talking during a test, not keeping answers or work covered, or looking at someone else's paper may result in a zero grade for that test or quiz. Anyone cheating or allowing other students to cheat will receive a zero on that assignment.

HS Grading Policy:

Please refer to the policy and procedures posted online in our Parent-Student Handbook.

Class Policies:

1. Attendance- Consistent attendance contributes to success in class. Students who are part of the learning process in class find the homework easier and understand the material better. Missing more than one class day usually requires some kind of tutoring for the student to catch up, so make every effort to come to class each day and actively participate while you are there.
2. Tardiness- A student who is not in his/her assigned seat before the bell rings will be marked tardy. If a student is tardy, he/she may lose homework percentage points due to the assignment being late. Tardies are handled on a school-wide basis, so consult the *Parent-Student Handbook* for more details. If a student is more than 15 minutes late, he/she is marked absent for that period.

School Policies and Expected Student Learning Results (ESLRs):

Students are subject to all academic policies of the school as found in the Parent-Student Handbook. Furthermore, it is each student's responsibility to read and follow all academic policies of Monte Vista Christian School. In addition to addressing each ESLR every year, we target a specific ESLR each academic year for particular focus.

Students who earn a C or better in both 1st and 2nd semesters of this class can advance to the next mathematics course at Monte Vista. Students who earn an F need to repeat the class (often accomplished in summer school). It is recommended that students who receive a D repeat the

course to enable them to be successful in future mathematics courses. In addition, a D is not considered a passing grade by some universities (for example, the University of California), so the student will not receive college credit for the course in these cases unless it is repeated and passed with a C or better.

Miscellaneous:

Required Materials: Every student is required to bring the following items to class each day.

- iPad with the digital textbook downloaded
- Math Notebook (must be a Mead style composition notebook preferably with graph paper rather than lined paper)
- Colored pen for correcting homework
- Pencil (preferably mechanical)
- Binder paper
- Graph paper (for all graphs done for homework)
- Calculator: Please find a scientific calculator. (Students cannot use a graphing calculator or a calculator that solves equations)