

Syllabus—Algebra 2

Introduction/Philosophy

I am excited to work with your son/daughter this year. I believe strongly that every student can master math given the proper tools and instruction. Your student will be working with a group of peers at approximately the same level. They will work as a team to encourage and motivate each other to move down the “field of math.”

I believe strongly in teaching students how to learn and to think critically. It is important to think of math, as you would think of learning to ride a bike. When you learn a new math concept, the student will first be a little unsure. With practice, they will become confident. With mastery, they will be fluent and will not have to think of “balancing on the bike.” This is my goal...to promote fluency, confidence, and excitement about learning math.

Class Times

Fridays 10:45-1:15

You can sign up for the class alone or sign up for the class plus homework help. Homework Help will be offered on Tuesdays from 12:30-3:00.

If you need to contact me, I will be available to parents from 3:00-4:00 on Tuesdays. You can text me or call during this time. My cell phone number is 832-562-1969.

Materials

Teacher provided:

Binder (Notes/Hmwk/Other copies)

Yellow Folder

Parents will purchase:

Supply Fee: \$50

McDougal Littell Algebra 2: Student Edition Textbook ISBN-13: 978-0618250202

Texas Instruments TI-84 CE Graphing Calculator

Pencil/Eraser/3 Highlighters/Spiral for extra paper (It does not matter what type)

Concepts Covered (Students must have passed Algebra 1)

This class is designed to help students excel in all of Algebra 2 skills and to prepare them to excel in Pre-Calculus the following year. Students will be taught to look for nonlinear patterns and solve and graph with these to make predictions.

In Algebra 2 our focus of study is on:

1. Review Linear Equations from Algebra
2. Linear Regression, Correlation
3. Piecewise Functions
4. Step Functions (Greatest Integer)
5. Systems – Solving 2×2 (6 methods – Graphing, Substitution, Elimination, Cramer's, Augmented, Inverse), Equ/Inequ
6. Systems – Solving 3×3 (4 methods – Elimination, Cramer's, Augmented, Inverse), Optimization, Area of a Tri. given 3 pts.
7. Matrices – Classify/Add/Subtract/Multiply/Properties/Inverse/Identity
8. Quadratics – Graphing, Factoring, Solving (Factoring, Quadratic Formula, Completing the Square), Equ/Inequ, Word Problems, Finding the equation
9. Complex Numbers – imaginary numbers
10. Polynomials – Classify, Standard Form, General Graphs, Evaluating (Synthetic Subst), Perfect Cubes (Pascal's Triangle), Factoring, Dividing (Synthetic Division)
11. Solving Cubics
12. Graphing Cubics
13. Complex Radicals – Rational Exponents
14. Inverse Functions
15. Solving and Graphing Radicals
16. Exponential Growth and Decay – Simplifying, Solving, Graphing
17. Logarithmic Functions – Simplifying, Solving, Graphing
18. Rational Equations – Direct/Inverse/Joint Variation, Simplifying, Solving, Graphing
19. Distance and Midpoint
20. Conics – Circles, Ellipses, Hyperbolas
21. Trigonometric Functions – Right Triangle, Radian, Ratios, Inverse, Law of Sines, Law of Cosines
22. Sequences and Series
23. Probability and Statistics – Permutations, Combinations, Compound Events, Independent/Dependent Events, Binomial/Normal Distributions

Drop Off/Class Structure

Please try to be on time. I will start promptly at the scheduled time and all class time is needed to make sure students learn all information needed for homework completion.

Students should bring to class all materials. They will turn in yellow folder with homework in it and will take a quiz on notecards each week when they enter the class. We will then take all new notes and if time permits, go through a sampling of homework.

Participation is key to success. Strong character is incredibly important. Students are expected to respect each other and the teacher at all times. We are a team and students are expected to encourage classmates and work together.

I will try to video classes for kids who might be absent, however I can not guarantee that there might not be technical issues. So, students who are absent can get notes from another student in class, or they can read their textbook, if needed.

Grading System

A 90-100

B 80-89

C 70-79

D 60-69

F 59-below

Grade Breakdown

25% Homework Completion

25% Quiz

25% Midterm

25% Final

Parent Meeting

There will be a mandatory meeting the first Friday of classes at 5:00pm. It is important that all attend. This will be a parent only meeting.

Pick-up and Homework

It is extremely important that the students do their homework and study each week....practice is key to success! The notecards they are studying each week are the “sight words” of math. You cannot solve (read) a harder math problem (novel) without having these memorized. The homework helps their brains to learn how to problem solve. Without doing the homework, students are watching the game, but not learning how to play. They must wrestle with the process to learn it. I encourage students to have a set time and place to work math each week. They should set aside 5 hours to work homework and study each week.

Homework should be neat, organized, easy to follow with all work shown. Credit will not be given if work is not shown. Students should check that answers are accurate and should ask questions if unable to get to the correct answer.

Late to pick-up/Emergency

If there is an emergency, please text me. I will either have my phone videoing class or off during teaching, but if there is a student whose mom/dad is not there, I will check my phone to see if there is a problem.

Missing class

Please try not to miss class. If you will be missing class, let me know. Watch the video (if available) and take notes OR get notes from another student OR read and take notes from your textbook. Follow your scope and sequence and make sure you are ready for the quiz and that homework is completed.