**Algebra 2 Mrs. Smith**

**JC/LISD Academy abbey.smith@lisd.us**

**Course Syllabus jclisdacademymath.weebly.com**

**Course Description**

Algebra 2 provides a review and extension of the concepts taught in Algebra 1 and provides further development of the concept of a function. Throughout this course, students will develop learning strategies, critical thinking skills, and problem solving techniques to prepare for future math courses and/or college math courses.

**Course Objectives**

Students will be able to:

* Describe, explain, simplify, graph, analyze, and use linear, exponential, logarithmic, polynomial, quadratic, rational, and radical functions.
* Solve equations, inequalities, and systems of equations and inequalities.
* Solve application problems, including the ability to:
	+ Represent a situation using a graph, table, or equation.
	+ Predict outcomes from above representations.
* Use appropriate technology as part of completing the objectives above.

**Required Materials**

***Textbook:*** The textbook for this class isIntermediate Algebra: Functions and Authentic*Applications,*

 *4th Edition* by Jay Lehmann
***Calculator:*** graphing calculator

 ***Notebook:*** loose leaf or bound note book paper

***Portfolio:*** three ring binder or folder to collect and organize course materials

**Grade**

Your overall grade for the semester will be calculated based on the following:

Grade Components

Practice Problems, Homework, and Other Assignments: 30%

Tests, Quizzes, and Other Assessments: 50%

Final Exam: 20%

Grading Scale

A = 90-100%

B = 80-89%

C = 70-79%

D = 60-69%

F = Don’t even think about it ☺

Please note that students must earn at least 70% to pass the course.

**Attendance & Participation Expectations**

Attendance and participation are necessary to be successful in this course. You must come to class on time and be prepared for the day’s lesson and/or activities. It is expected that you will:

* Be in class every day that it is scheduled, actively participating/engaged, and present throughout the entirety of class, unless otherwise discussed.
* Have the required course materials each day.
* Have given a serious attempt for each problem assigned in the homework before the next class period begins.
* Advocate for yourself, ask thoughtful and reflective questions in class whenever you are confused, and/or attend tutoring.

Based on these expectations, you will be present for any announcements, and will have all of the resources necessary to complete assignments and formal assessments. Failure to meet these reasonable expectations could cause a negative impact on your grade.

**Late Work and Absences Policy**

In general, I do not accept late work. The only two exceptions to this rule are in the cases of absence and late work tickets. If you are absent from class, you will be given one day for every day that you were absent to make up the assignments you missed. In addition, you will receive two late work tickets that may be used to turn in two assignments late. You can only use a late work ticket for assignments (not projects or assessments) that are due for the current chapter/unit being taught. **Absolutely no work will be accepted after the chapter/unit test, even with a ticket – NO EXCEPTIONS.** Apart from the cases of excused absence and late work tickets, **no late work will be accepted.**

When you are absent, it is **your responsibility** to find out what you missed by checking the class website or seeing me before or after school, not during class time. If you do not find out what you missed you may not know about an upcoming test or quiz, or you may not get credit for a homework assignment that we did when you were absent.

Quizzes, tests, and exams will not be made up during class time. It is **your responsibility** to meet with me to schedule a make-up time that works best for you and me during which you can take the quiz, test, or exam. Failure to schedule a make-up time or failure to attend a make-up time will result in a zero.

**Practice Problems, Homework, and Other Assignments**

**Assignments in this category will show up in the grade book as “assignments.”** Practice Problems play a crucial role in the development of your knowledge and success in this course. Practice Problems are NOT busy work; they are designed for you to practice the skills you have learned and to assess the knowledge you have gained. You will typically be assigned daily homework that is expected to be completed fully and legibly. You will also be assigned online homework regularly. Homework must be completed prior to the start of class on the date that it is due. You are expected to give a serious and thorough attempt for each problem that has been assigned. If there is anything from the assignment that you do not understand, please come to class with your very best attempt and be prepared to ask questions. Graded assignments will be evaluated sometimes for completion and sometimes for accuracy.

**Tests, Quizzes, and Other Assessments**

**Assignments in this category will show up in the grade book as “tests.”** Quizzes and tests (and occasionally other types of assessments) will be administered throughout the course. Quizzes and tests will include material covered in class lectures, assigned homework, and class activities/projects. Quizzes may or may not be announced prior to their administration. A test will be given at the end of a chapter or unit. Tests will be announced prior to their administration.

During a quiz or test, you will be allowed to use a blank piece of paper, a pencil, an eraser, and often a calculator. Occasionally, calculators will be forbidden. You may not use a calculator that is on a mobile phone, smart phone, or any device that can retrieve information from any outside source. Headphones/iPods/mp3 players are not allowed anytime during a quiz or test.

If you are in class when a quiz or test is administered, you must take the quiz or test on the scheduled day. The only exception would be if you were absent the day before the quiz or test and we covered new material that day that will be included on the quiz or test.

**Final Exam**

A comprehensive final exam worth 20% of the final grade will be given at the end of the semester. The content and type of questions will be similar to those on quizzes and tests given during the semester, and the exam will cover material from the entire semester. During the final exam, you will be allowed to use a blank piece of paper, a pencil, an eraser, and a calculator. You may not use a calculator that is on a mobile phone, smart phone, or any device that can retrieve information from any outside source. Headphones/iPods/mp3 players are not allowed anytime during the final exam.

**Extra Credit**

There will be no opportunities for extra credit. Your grade calculation is based solely on your performance on the assignments listed in the Grade section above.

**Class Website**

Our class website is jclisdacademymath.weebly.com. I will update the website at least once per week by posting weekly plans, important information, and materials related to our class. Many times, I will ask you to check the website to review assignment sheets, examples, and supplementary materials. Even if I do not explicitly ask you to check the website, you should check it at least once per week to review what has been posted.

**Academic Integrity**

You are encouraged to work together and assist each other in a reasonable manner on the homework assignments. However, all quizzes, tests, assessments, and exams will be taken independently. On a quiz, test, assessment, or exam, anyone found giving assistance, receiving assistance, using any other unauthorized source of information, or cheating in any other way will receive a zero.

**Associate Degree Outcomes:**

ADO 3: Demonstrate computational skills and mathematical reasoning. Apply arithmetic skills and mathematical reasoning by solving problems, documenting process, interpreting results and evaluating the reasonableness of outcomes.

ADO 7: Think Critically. Demonstrate critical thinking through questioning, interpreting, analyzing, evaluating, inferring, and synthesizing information to solve problems in a variety of settings.

**Tentative Course Schedule (*Subject to change)***

**Semester 1**

|  |  |
| --- | --- |
| Chapter / Unit | Sections Covered |
| Chapter 1: *Linear Equations and Linear Functions* | 1.1 Using Qualitative Graphs to Describe Situations 1.2 Graphing Linear Equations 1.3 Slope of a Line1.4 Meaning of Slope for Equations, Graphs, and Tables 1.5 Finding Linear Equations 1.6 Functions  |
| Chapter 2: *Modeling with Linear Functions* | 2.1 Using Lines to Model Data 2.2 Finding Equations for Linear Models 2.3 Function Notation and Making Predictions 2.4 Slope is a Rate of Change  |
| Chapter 3: *Systems of Linear Equations* | 3.1 Using Graphs and Tables to Solve Systems 3.2 Using Elimination and Substitution to Solve Systems 3.3 Using Systems to Model Data 3.4 Value, Interest, and Mixture Problems3.5 Using Linear Inequalities in One Variable to Make Predictions |
| Chapter 4: *Exponential Functions* | 4.1 Properties of Exponents 4.2 Rational Exponents 4.3 Graphing Exponential Functions 4.4 Finding Equations for Exponential Models 4.5 Using Exponential Functions to Model Data  |
| Chapter 5: *Logarithmic Functions* | 5.1 Inverse Functions 5.2 Logarithmic Functions 5.3 Properties of Logarithms 5.4 Using Power Property w/ Exponential Models to Make Predictions 5.5 More Properties of Logarithms5.6 Natural Logarithms |

**Tentative Course Schedule (*Subject to change)***

**Semester 2**

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| --- | --- |
| Chapter / Unit | Sections Covered |
| Chapter 6: *Polynomial Functions* | 6.1 Adding and Subtracting Polynomial Expressions 6.2 Multiplying Polynomial Expressions and Functions 6.3 Factoring Trinomials 6.4 Factoring Polynomials 6.5 Factoring Special Binomials; A Factoring Strategy 6.6 Using Factoring to Solve Polynomial Equations  |
| Chapter 7: *Quadratic Functions* | 7.1 Graphing Quadratic Functions in Vertex Form7.2 Graphing Quadratic Functions in Standard Form 7.3 Solving Quadratic Equations by Extracting Square Roots 7.4 Solving Quadratic Equations by Completing the Square 7.5 Using the Quadratic Formula to Solve Quadratic Equations 7.7 Finding Quadratic Models 7.8 Modeling with Quadratic Functions  |
| Chapter 8: *Rational Functions* | 8.1 Finding the Domains of Rational Functions 8.2 Multiplying and Dividing Rational Expressions8.3 Adding and Subtracting Rational Expressions 8.5 Solving Rational Equations 8.6 Modeling with Rational Functions  |
| Chapter 9: *Radical Functions* | 9.1 Simplifying Radical Expressions 9.2 Adding, Subtracting, and Multiplying Radical Expressions 9.3 Rationalizing Denominators and Simplifying Quotients 9.4 Graphing and Combining Square Root Functions 9.5 Solving Radical Equations 9.6 Modeling Using Square Root Functions |
| *Additional Topics* | Trigonometric FunctionsInferences and Conclusions from DataProbability |

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By signing below, you indicate that you have read and understood what is expected of students in this course, and you are agreeing to the requirements and expectations of this course.

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Student Signature Printed Name Date

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Parent/Guardian Signature Printed Name and Relationship to Student Date