



KENNEDY HIGH SCHOOL COURSE SYLLABUS DEPARTMENT OF MATHEMATICS

NUMBER, TITLE, UNITS AND PRINCIPAL/DEPARTMENT APPROVED DESCRIPTION	
	Algebra II (Two semesters; 5 units each semester; 10 units total)
2.	GENERAL INFORMATION
Term and year:	2016-2017
Instructor:	Samantha Walker
Class Room:	C310
Phone number:	916-433-5200
E-mail address:	Samantha-walker@scusd.edu
3.	TEXTBOOKS AND/OR RECOMMENDED OR REQUIRED READINGS
	<i>Algebra II</i> , by Bellman, Bragg, Charles, Handlin, and Kennedy (Prentice Hall, NJ; 2004)
4.	GENERAL OVERVIEW
	<p>Algebra II is a course that expands on the topics of Algebra I and Geometry providing further mathematics development stressing the concept and application of a function. This particular course uses a common core approach to learning. Students will be introduced to standards for mathematical practice. This college preparation course is the foundation for high school advanced and basic college level mathematics courses. It is the bridge from the concrete to the abstract study of mathematics. Starting with a review the fundamental of skills of algebra, students will explore more advanced algebraic expressions and concepts. Topics include simplifying expressions, evaluating and solving equations and inequalities, and graphing linear and quadratic functions and relations. Real world applications are presented within the course content and a function's approach is emphasized. Topics include: (1) relations, functions, equations and inequalities; (2) conic sections; (3) polynomials; (4) algebraic fractions; (5) logarithmic and exponential functions; (6) sequences and series; and (7) counting principles and probability.</p>
5.	COURSE OBJECTIVES
	<p>The following sequence by textbook chapter identifies the major units making up the Algebra II curriculum.</p> <ul style="list-style-type: none"> Chapter 1 Tools of Algebra Chapter 2 Functions and Relations Chapter 3 Systems of Equalities and Inequalities Chapter 4 Matrices Chapter 5 Quadratic Functions

	<p>Chapter 6 Polynomial Functions Chapter 7 Radical Functions Chapter 8 Exponential and Logarithmic Functions Chapter 9 Rational Functions Chapter 12 Probability and Statistics Chapter 11 Sequence and Series Chapter 10 Conic Sections</p> <p>Students will acquire and demonstrate knowledge of the concepts, definitions and properties required to meet the Algebra II mathematics standards. Students will develop critical thinking and decision-making skills by connecting concepts to practical applications needed to be productive members of society. All students are expected to demonstrate the following objectives:</p> <ul style="list-style-type: none"> • Students should be able to work with functions represented in a variety of ways: graphical, numerical, analytical, or verbal. Students should understand the connections among these representations. • Students should be able to communicate mathematics both orally and in well-written sentences and should be able to explain solutions to problems. • Students should be able to model a written description of a physical situation with a function. • Students should be able to use technology (graphing calculators and graphing software) to help solve problems, experiment, interpret results, and verify conclusions. • Students should be able to determine the validity of solutions, including sign, size, relative accuracy, and units of measurement.
6.	<p>COURSE REQUIREMENTS, ATTENDANCE AND SPECIFIC GRADING POLICY</p>
	<p>Grades are based on demonstrated mastery of concepts and development of skills, not effort or potential. <i>A major component of your grade is determined by your results on assessments.</i> Progress reports are available on the District Web site in Infinite Campus.</p> <p>Assignments are a guide as to what is most important and what will be tested. Assignments are given daily. <i>Students not actively engaged in assignments and study will most likely fail the class.</i> Planning your study should include a minimum hour of quality time daily. There is no weighting applied to any score.</p> <p>The math dept. complies with district protocol that can be viewed at www.scusd.edu.</p>
7.	<p>DESCRIPTION OF MAJOR ACTIVITIES/EXERCISES/PROJECTS</p>

	<p>Instructional Strategies and Activities Include:</p> <ul style="list-style-type: none"> · Lecture on concepts and techniques · Presentation/modeling of examples and strategies · Large and small group discussions and explorations · Reading and writing assignments · Practice and learning through classwork and daily assignments · Applications to demonstrate relevance and extend learning · Active student engagement in group work and discussions · Quizzes, and tests to encourage and monitor learning
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8.	GENERAL STATEMENTS
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	<p>CLASSROOM BEHAVIOR EXPECTATIONS: The following summarize important expectations for classroom behavior.</p> <ul style="list-style-type: none"> • Students are expected to attend class every day. • Students are expected to complete all assignments on time. • Students are expected to be seated and prepared for learning when the bell rings. • Students are expected to treat their classmates with respect; no put downs of any kind. • Students are expected to actively and positively participate in class. • Students are expected to demonstrate personal responsibility, honesty, and integrity in all of their actions. <p>CLASSROOM RULES: The following few rules guide classroom behavior and activity.</p> <ul style="list-style-type: none"> • Follow teacher directions and requests immediately. • Keep your hands, feet, and other objects to yourself. • Remain seated unless you have permission to move about the classroom. <p>Eating (food, candy, etc.) and gum chewing are not permitted in the classroom.</p> <p>ELECTRONIC DEVICES: Electronics (music devices, cell phones, etc.) are to be turned completely off and away.</p> <p>COURSE REQUIREMENTS, ATTENDANCE AND GRADING POLICY</p> <p>Grading Scale:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">90% - 100%</td> <td style="width: 20%;">A</td> <td style="width: 20%;"></td> </tr> <tr> <td>80% - 89.9%</td> <td>B</td> <td></td> </tr> <tr> <td>70% - 79.9%</td> <td>C</td> <td></td> </tr> <tr> <td>60% - 69.9%</td> <td>D</td> <td></td> </tr> <tr> <td>0 % - 59.9%</td> <td></td> <td>F</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td style="width: 15%; text-align: center;">60%</td> <td>Assessments</td> </tr> <tr> <td style="text-align: center;">15%</td> <td>Semester Final - ALSO replaces the lowest assessment score the final exam score is higher provided the student obtain</td> </tr> </table>	90% - 100%	A		80% - 89.9%	B		70% - 79.9%	C		60% - 69.9%	D		0 % - 59.9%		F	60%	Assessments	15%	Semester Final - ALSO replaces the lowest assessment score the final exam score is higher provided the student obtain
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	parent signature.	
25%	Daily Assignments	
Up to 2%	Extra Credit added in Daily Assignments category	

Late work resulting from student absences will only be accepted if absence is excused through the attendance office. It is the student's responsibility to make arrangements with the teacher the day before or after the absence for make-up work.

Zeros will be issued on ANY daily assignment or assessment to cheating students and the enabler.

The teacher has the right to adjust assessments, daily assignments and due dates as necessary.

HOMEWORK AND STUDY: Homework and student study is an essential part of your education. Any student expecting to do well in this course should carefully read the text and do all the assigned work.

CHARACTERISTICS OF QUALITY WORK: Using the following guidelines will help you master the Algebra II objectives. Quality work has the following characteristics.

- Is complete with full solution. That is, all problems are completed or at least attempted.
- The supporting work for each problem is shown completely using proper algebraic conventions and notations.
- The work is done neatly.
- The work is done accurately.

CHARACTERISTICS OF A SUCCESSFUL STUDENT: Students that are successful in school generally exhibit the following traits:

- Is consistently present for class.
- Desires to learn the material presented.
- Uses time wisely.
- Does practice work, study, and test preparation.
- Asks thoughtful questions during class.
- Actively participates in class and gets extra help when needed.

CALCULATOR USE AND EXPECTATION: A scientific calculator (preferably TI models) is necessary for this course. The calculator is a tool to aid in learning concepts, not just a means of computation.

9	Outline of class sessions: Ch 1 Algebra Review. Pacing and content at teacher discretion. Ch 2 (14 days) 2.1 Relations and Functions 2.2 Linear Functions 2.3 Direct Variation 2.4 Using Linear Models 2.5 Absolute Value Functions 2.6 Vertical and Horizontal Translations 2.7 Two-variable Inequalities Ch 3 (12 days) 3.1 Graphing Systems of Equations 3.2 Solving Systems Algebraically 3.3 Systems of Inequalities 3.4 Linear Programming 3.6 Systems with Three Variables Ch 4 (12days) 4.1 Organizing Data Into Matrices 4.2 Adding and Subtracting Matrices 4.3 Matrix Multiplication 4.5 2 x 2 Determinants and Inverses 4.8 Cramer's Rule Ch 5 (16 days) 5.1 Modeling Data with Quadratic Functions 5.2 Properties of Parabolas 5.3 Translating Parabolas 5.4 Factoring Quadratic Equations 5.5 Quadratic Equations 5.6 Complex Numbers 5.7 Completing the Square 5.8 Quadratic Formula Ch 6 (16 days) 6.1 Polynomial Functions 6.2 Polynomials and Linear Factors 6.3 Dividing Polynomials 6.4 Solving Polynomial Equations 6.5 Theorems about Roots of Polynomial Equations 6.6 Fundamental Theorem of Algebra 6.7 Permutations and Combinations 6.8 The Binomial Theorem

<p>Ch 7 (16 days)</p> <ul style="list-style-type: none">7.1 Roots and Radical Expressions7.2 Multiplying and Dividing rational Expressions7.3 Bimomial Radical Expressions7.4 Rational Exponents7.5 Solving Radical Equations7.6 Function Operations7.7 Inverse Relations and Functions7.8 Graphing Radical Functions <p>Ch 8 (13 days)</p> <ul style="list-style-type: none">8.1 Exploring Exponential Models8.2 Properties of Exponential Functions8.3 Logarithmic Functions as Inverses8.4 Properties of Logarithms8.5 Exponential an Logarithmic Equations8.6 Natural Logarithms <p>Ch 9 (10 days)</p> <ul style="list-style-type: none">9.1 Inverse Variation9.2 Graphing Inverse Variations9.3 Rational Functions and Their Graphs9.4 Rational Expressions9.5 Adding and Subtracting Rational Expressions9.6 Solving Rational Equations <p>Ch 11 (11 days)</p> <ul style="list-style-type: none">11.1 Mathematical Patterns11.2 Arithmetic Sequences11.3 Geometric Sequences11.4 Arithmetic Series11.5 Geometric Series <p>Ch 10 (13 days)</p> <ul style="list-style-type: none">10.1 Exploring Conic Sections10.2 Parabolas10.3 Circles10.4 Ellipses10.5 Hyperbolas10.6 Translating Conic Sections <p>Probability (6 days)</p> <ul style="list-style-type: none">1.6 Probability9.7 Probability of Multiple Events
