

**YOSEMITE HIGH SCHOOL**  
**50200 ROAD 427 - OAKHURST, CA 93644**  
**(559) 683-4667**

COURSE TITLE: ALGEBRA C  
DEPARTMENT: MATHEMATICS

REQUIREMENT SATISFIED:

High School:	X	Model Curriculum Standards:	X
State College:		Frameworks:	X
UC Approved:			

GRADE LEVEL: 10-12      LENGTH OF COURSE: 1 SEMESTER      CREDITS: 5

PREREQUISITE: Completion of Algebra A & B

TEXTBOOKS: Algebra 1, Applications and Connections, Glencoe

INSTRUCTIONAL

MATERIAL: Accelerated Math Software

COURSE DESCRIPTION:

This two-year course (Algebra ABCD) will cover all California State Algebra 1 standards. The completion of this 2-year course is UC approved as the equivalent for Algebra 1.

COURSE OUTLINE/ALIGNMENT TO CALIFORNIA STATE STANDARDS AND EXPECTED SCHOOLWIDE LEARNING RESULTS:

<u>Chapter/ Text</u>	<u>Accelerated Math Objective (7<sup>th</sup> grade unless Otherwise indicated</u>	<u>Assignment Course Content/ Objective</u>	<u>Standards Addressed</u>	<u>ESLRs</u>
10-1	58,59	Find a slope of a line, given the coordinates of two points on the line.	8	1,2,3,4,6
10-2	65	Point slope form	7	1,2,3,4,6
10-3	60,61	Write an equation of a line in slope-intercept form given the slope and y-intercept. Determine the x- and y-intercepts of a graph.	6	1,2,3,4,6
10-4	69,70,71	Graph linear equations using the x- and y-intercepts or the slope and y-intercept.	6	1,2,3,4,6

COURSE OUTLINE/ALIGNMENT TO CALIFORNIA STATE STANDARDS AND EXPECTED SCHOOLWIDE  
 LEARNING RESULTS: (Continued)

<u>Chapter/ Text</u>	<u>Accelerated Math Objective (7<sup>th</sup> grade unless Otherwise indicated</u>	<u>Assignment Course Content/ Objective</u>	<u>Standards Addressed</u>	<u>ESLRs</u>
10-5	63,64,65,66	Write a linear equation in slope-intercept form given the slope of a line and the coordinates of a point on the line or the coordinates of two points on the line.	7	1,2,3,4,6
10-6	67	Write an equation of a line that passes through a given point and is parallel or perpendicular to the graph of a given equation.	8	1,2,3,4,6
11-2	130,131	Solve systems of equations by graphing and determine whether a system has one solution, no solutions, or infinitely many solutions by graphing.	6,9	1,2,3,4,6
11-3	132,133	Solve systems of equations by the substitution method.	9	1,2,3,4,6
11-4	134,135,136	Solve systems of equations by the elimination method using addition and subtraction.	9	1,2,3,4,6
11-5	134,135,136	Solve systems of equations by the elimination method using multiplication and addition.	9	1,2,3,4,6
11-6	150,151	Solve systems of inequalities by graphing.	6,9	1,2,3,4,6
6-2	34,35,39,40	Multiply monomials and simplify expressions involving powers of monomials.	2,10	1,2,3,4,6
6-3	32,37,38	Simplify expressions containing negative exponents and involving quotients of monomials.	2,10	1,2,3,4,6

COURSE OUTLINE/ALIGNMENT TO CALIFORNIA STATE STANDARDS AND EXPECTED SCHOOLWIDE  
 LEARNING RESULTS: (Continued)

<u>Chapter/ Text</u>	<u>Accelerated Math Objective (7<sup>th</sup> grade unless Otherwise indicated</u>	<u>Assignment Course Content/ Objective</u>	<u>Standards Addressed</u>	<u>ESLRs</u>
6-4	42,43	Scientific notation	Prior Standard	1,2,3,4,6
1-5	28,29	Solve open sentences by performing arithmetic operations.	10	1,2,3,4,6
6-5	75,76,77	Find the degree of a polynomial and arrange the terms so that the powers of a certain variable are in ascending or descending order.	10	1,2,3,4,6
6-6	79,80,81	Add and subtract polynomials.	10	1,2,3,4,6
6-7	83	Multiply a polynomial by a monomial. Simplify expressions involving polynomials.	10	1,2,3,4,6
6-8	84,85,86	Multiply two polynomials using the FOIL method or distributive property.	10	1,2,3,4,6
6-9	87	Use the patterns for $(a+b)^2$ , $(a-b)^2$ and $(a+b)$ $(a-b)$ .	10	1,2,3,4,6
7-1	95	Greatest common factors	11	1,2,3,4,6
7-2	95	Use the GCF and the distributive property to factor polynomials.	11	1,2,3,4,6
7-3	101	Factoring by grouping	11	1,2,3,4,6
7-5	97,98,99,104	Factor quadratic trinomials	11	1,2,3,4,6
7-6	102	Identify and factor polynomials that are the differences of squares.	11	1,2,3,4,6
7-7	102,104	Perfect squares/factoring	11	1,2,3,4,6

COURSE OUTLINE/ALIGNMENT TO CALIFORNIA STATE STANDARDS AND EXPECTED SCHOOLWIDE LEARNING RESULTS: (Continued)

<u>Chapter/ Text</u>	<u>Accelerated Math Objective (7<sup>th</sup> grade unless Otherwise indicated</u>	<u>Assignment Course Content/ Objective</u>	<u>Standards Addressed</u>	<u>ESLRs</u>
7-8	96,100,103	Factor polynomials by applying the various methods of factoring.	11	1,2,3,4,6
7-9	120	Use the zero product property to solve equations.	14	1,2,3,4,6
7-10	120	Solve equations by using various methods of factoring and applying the zero product property.	14	1,2,3,4,6
8-1	154	Simplify rational expressions.	12	1,2,3,4,6
8-2	157	Multiply rational expressions.	13	1,2,3,4,6
8-3	92,158,159	Divide rational expressions.	13	1,2,3,4,6
8-4	93	Divide polynomials by binomials.	13	1,2,3,4,6
8-5	160,162	Add and subtract rational expressions with like denominators.	13	1,2,3,4,6
8-7	161,163	Add or subtract rational expressions with unlike denominators.	13	1,2,3,4,6
8-8	164	Simplify mixed expressions and complex fractions.	13	1,2,3,4,6

DISTRICT/STATE CONTENT STANDARDS ADDRESSED:

**Algebra**

- 1.0 Students identify and use the arithmetic properties of subsets of integers, rational, irrational and real numbers. This includes closure properties for four basic arithmetic operations where applicable.
  - 1.1 Students use properties of numbers to demonstrate that assertions are true or false.

- 2.0 Students understand and use such operations as taking the opposite, reciprocal, raising to a power, and taking a root. This includes the understanding and use of the rules of exponents.
- 3.0 Students solve equations and inequalities involving absolute values.
- 4.0 Students simplify expressions prior to solving linear equations and inequalities in one variable such as  $3(2x-5)+4(x-2)=12$
- 5.0 Students solve multi-step problems including word problems involving linear equations and linear inequalities in one variable with justification of each step.
- 6.0 Students graph a linear equation and compute the x- and y- intercepts (e.g., graph  $2x+6y=4$ ). They are also able to sketch the region defined by linear inequality (e.g., sketch the region defined by  $2x+6y<4$ ).
- 7.0 Students verify that a point lies on a line given an equation of the line. Students are able to derive linear equations using the point-slope formula.
- 8.0 Students understand the concepts of parallel and perpendicular lines and how their slopes are related. Students are able to find the equation of a line perpendicular to a given line that passes through a given point.
- 9.0 Students solve a system of two linear equations in two variables algebraically, and are able to interpret the answer graphically. Students are able to solve a system of two linear inequalities in two variables and to sketch the solution sets.
- 10.0 Students add, subtract, multiply and divide monomials and polynomials. Students solve multi-step problems, including word problems, using these techniques.
- 11.0 Students apply basic factoring techniques to second- and simple third-degree polynomials. These techniques include finding a common factor for all of the terms in a polynomial, recognizing the difference of two squares, and recognizing perfect squares of binomials.
- 12.0 Students simplify fractions with polynomials in the numerator and denominator by factoring both and reducing to lowest terms.
- 13.0 Students add, subtract, multiply and divide rational expressions and functions. Students solve both computationally and conceptually challenging problems using these techniques.
- 14.0 Students solve a quadratic equation by factoring or completing a square.
- 15.0 Students apply algebraic techniques to rate problems, work problems, and percent mixture problems.
- 16.0 Students understand the concepts of a relation and a function, determine whether a given relation defines a function, and give pertinent information about given relations and functions.

- 17.0 Students determine the domain of independent variables, and range of independent variables defined by a graph, a set of ordered pairs, or symbolic expression.
- 18.0 Students determine whether a relation defined by a graph, a set of ordered pairs, or symbolic expression is a function and justify the conclusion.
- 19.0 Students know the quadratic formula and are familiar with its proof by completing the square.
- 20.0 Students use the quadratic formula to find the roots of a second degree polynomial and to solve quadratic equations.
- 21.0 Students graph quadratic functions and know that their roots are the x-intercepts.
- 22.0 Students use the quadratic formula and/or factoring techniques to determine whether the graph of a quadratic function will intersect the x-axis in zero, one, or two points.
- 23.0 Students apply quadratic equations to physical problems such as the motion of an object under the force of gravity.
- 24.0 Students use and know simple aspects of a logical argument.
- 24.1 Students explain the difference between inductive and deductive reasoning and identify and provide examples of each.
- 24.2 Students identify the hypothesis and conclusion in logical deduction.
- 24.3 Students use counterexamples to show that an assertion is false and recognize that a single counterexample is sufficient to refute an assertion.
- 25.0 Students use properties of the number system to judge the validity of results, to justify each step of a procedure and to prove or disprove statements.
- 25.1 Students use properties of numbers to construct simple valid arguments (direct and indirect) for, or formulate counterexamples to, claimed assertions.
- 25.2 Students judge the validity of an argument based on whether the properties of the real number system and order of operations have been applied correctly at each step.
- 25.3 Given a specific algebraic statement involving linear, quadratic, or absolute value expressions, equations or inequalities, students determine if the statement is true sometimes, always, or never.

OUTCOMES:

Students will demonstrate basic competency in course standards by achieving a minimum 60% proficiency on coursework or by passing the final exam.

INSTRUCTIONAL STRATEGIES:

Direct instruction  
Group work  
Individual instruction  
Peer tutoring

ASSESSMENT:

Teacher prepared tests and quizzes  
Department-wide benchmark assessments including unit, mid-term, and final exams  
Review of student work samples including class work and homework.  
Student demonstrations  
Other informal assessments

12/00  
revised: 5/01; 8/03; 2/04