

## Algebra II Course Outline

<b>Fall Semester</b>				
<b>Grading Period</b>	<b>Topics</b>	<b>Section(s) in Text</b>	<b>Standard Addressed</b>	<b># of Items on the CST</b>
First Grading Period  (First six weeks of instruction)	Functional Concepts, Composite Functions, Evaluating Functions	7.6 – 7.7	24 and 25	1/2 , 1/3
	Multiply, divide (long division included), factor, and solve polynomial expressions and equations	6.3 -6.4	3 and 4	4, 3
	Solve and graph linear equations and inequalities involving absolute value	2.5 – 2.7	1	1
	Solve systems of linear equations and linear inequalities involving 2 and 3 variables	3.2, 3.3, 3.6	2	5
Second Grading Period  (Second six weeks of instruction)	Graphing systems of linear equations and inequalities involving 2 and 3 variables	3.1, 3.3	2	5
	Compute combinations and permutations and apply them to calculate probabilities	6.7, 12.6	18 and 19	2, 2
	Solve probabilities for particular events infinite sample spaces including conditional probability	9.7, 12.2	1 and 2 (Probability and Statistics)	1, 2
Third Grading Period  (Third six weeks of instruction)	Solve and graph quadratic equations by completing the square, factoring and using the quadratic formula.	5.5, 5.7 – 5.8, 7.5	8	4
	Examine the affects of phase shifting within equations and quadratics in vertex form: $y = a(x-h)^2 + k$	5.1 – 5.3	9	2
	Graph quadratics and determine extrema, axis of symmetry, roots(zeros), domain and range and vertex	5.1 – 5.2, 5.5, 6.2	10	4
	Graph, add, subtract, multiply, divide complex numbers	5.6	5 and 6	2, 3

## Spring Semester

Grading Period	Topics	Section(s) In Text	Standard Addressed	# of Items on the CST
First Grading Period  (First six weeks of instruction)	Add, subtract, multiply, reduce rational expressions	9.4 – 9.6	7	6
	Simplify and solve equations and expressions involving rational exponents.	7.4 8.1 – 8.2	12	3
	Sum and Difference of Cubes	6.4	4	3
	Collect and analyze data of a simple random sample and compute the variance and standard deviation of that data	10.4	7 (Probability and Statistics)	2
Second Grading Period  (Second six weeks of instruction)	Graph and find inverse functions; determine domain and range of functions and their inverses	8.3	11.1 and 24	3, 1/2
	Judge the validity of an argument according to whether the properties of real numbers, exponents, and logarithms have been applied correctly at each step.	8.5	11.2	2 1/2
	Simplify, expand, graph, and solve equations and expressions involving logarithms	8.4 – 8.6	13, 14, 15	1, 2, 4
Third Grading Period  (Third six weeks of instruction)	Graph, simplify, and evaluate components of conic sections: parabolas, ellipses, hyperbolas, and circles	10.1 – 10.6	16 and 17	1/3, 1
	Find the general terms and sums of geometric and arithmetic series	11.1 – 11.5	22	2
	Summation formulas for finite and infinite geometric and arithmetic series	11.3	23	0
	Binomial Theorem and Pascal's Triangle	6.8	20	2
	Students apply mathematical induction to prove statements about positive integers		21	1/3