RIDGECROFT SCHOOL
ALGEBRA II

PACING GUIDE

TOPICS/CONCEPTS	TIME	CURRICULUM OBJECTIVES	RESOURCE(S) Algebra II (McDougal)
FIRST GRADING PERIOD	**30 Days**		
EQUATIONS AND INEQUALITIES • Algebraic Models • Absolute Value Equations and Inequalities	15	1.03, 2.08a,b, Goal 2	Textbook: Chapter 1
LINEAR EQUATIONS AND FUNCTIONS • Graphs • Rate of change • Best Fit Lines • Piecewise and Absolute Value Functions	15	1.05, 2.04a,b, 2.08a,b, 2.10	Textbook: Chapter 2
SECOND GRADING PERIOD	**30 Days**		
SYSTEMS OF LINEAR EQUATIONS AND INEQUALITIES • Methods of Solving Systems • Linear Programming (deemphasized)	15	2.10	Textbook: Chapter 3
MATRICES AND DETERMINANTS • Operations • Solving Systems Using Inverse Matrices	10	1.04, 2.10	Textbook: Chapter 4
QUADRATIC FUNCTIONS • Graphs • Methods of Solving Quadratic Functions	5	2.02a,b, 2.04a,b, 2.09a,b	Textbook: Chapter 5
THIRD GRADING PERIOD	**30 Days**		
QUADRATIC FUNCTIONS • Graphs • Methods of Solving Quadratic Functions • Complex Numbers • Quadratic Formula • Modeling	10	2.02a,b, 2.04a,b, 2.09a,b	Textbook: Chapter 5
POLYNOMIALS AND POLYNOMIALS FUNCTIONS • Graphing • Solving Polynomial Functions • Remainder and Factor Theorem • Modeling • Finite Differences	15	1.01, 1.03, 2.02a,b, 2.04a,b, 2.06a,b, 2.07a,b	Textbook: Chapter 6
REVIEW AND ASSESSMENT	5		
FOURTH GRADING PERIOD	**30 Days**		
POWERS, ROOTS, AND RADICAL • Rational Exponents and nth Roots • Power Functions • Inverse and Composite Functions • Radical Functions	20	1.01, 2.01, 2.07a,b	Textbook: Chapter 7
EXPONENTIAL AND LOGARITHMIC FUNCTIONS • Analyzing Growth and Decay	10	1.01, 2.03a,b, 2.04a,b	Textbook: Chapter 8

• Logarithms • Modeling • Logistic Growth			
FIFTH GRADING PERIOD	**30 Days**		
EXPONENTIAL AND LOGARITHMIC FUNCTIONS • Modeling • Logistic Growth	10	1.01, 2.03a,b, 2.04a,b	Textbook: Chapter 8
RATIONAL EQUATIONS AND FUNCTIONS • Inverse and Joint Variation • Complex Fractions	20	1.03, 1.05, 2.01, 2.05a,b	Textbook: Chapter 9
SIXTH GRADING PERIOD	**30 Days**		
QUADRATIC RELATIONS AND CONIC SECTIONS • Equations for Conic Sections • Recursive Rules	15	1.03, 2.02a,b, 2.04a,b, 2.09a,b, 2.10	Textbook: Chapter 10
SEQUENCES AND SERIES • Comparison of Arithmetic Sequence to Linear Functions • Comparison of Geometric Sequences to Exponential Functions	10	2.03a,b, 2.04a,b, 2.05a,b,c	Textbook: Chapter 11
REVIEW AND ASSESSMENT	5		

8/1/06

NC STANDARD COURSE OF STUDY

Algebra 2 continues students' study of advanced algebraic concepts including functions, polynomials, and rational expressions, systems of functions and inequalities, and matrices. Students will be expected to describe and translate among graphic, algebraic, numeric, tabular, and verbal representations of relations and use those representations to solve problems. Emphasis should be placed on practical applications and modeling. Appropriate technology, from manipulatives to calculators and application software, should be used regularly for instruction and assessment.

Prerequisites:

- Operate with matrices to solve problems.
- Create linear models, for sets of data, to solve problems.
- Use linear functions and inequalities to model and solve problems.
- Use quadratic functions to model problems and solve by factoring and graphing.
- Use systems of linear equations or inequalities to model and solve problems.
- Graph and evaluate exponential functions to solve problems.

GOAL 1: THE LEARNER WILL PERFORM OPERATIONS WITH COMPLEX NUMBERS, MATRICES, AND POLYNOMIALS.

1.01 Simplify and perform operations with rational exponents and logarithms (common and natural) to solve problems.
1.02 Define and compute with complex numbers.
1.03 Operate with algebraic expressions (polynomial, rational, complex fractions) to solve problems.
1.04 Operate with matrices to model and solve problems.
1.05 Model and solve problems using direct, inverse, combined and joint variation.

COMPETENCY GOAL 2: THE LEARNER WILL USE RELATIONS AND FUNCTIONS TO SOLVE PROBLEMS.

2.01 Use the composition and inverse of functions to model and solve problems; justify results.
2.02 Use quadratic functions and inequalities to model and solve problems; justify results.
(a) Solve using tables, graphs, and algebraic properties.
(b) Interpret the constants and coefficients in the context of the problem.
2.03 Use exponential functions to model and solve problems; justify results.
(a) Solve using tables, graphs, and algebraic properties.
(b) Interpret the constants, coefficients, and bases in the context of the problem.

2.04 Create and use best-fit mathematical models of linear, exponential, and quadratic functions to solve problems involving sets of data.
(a) Interpret the constants, coefficients, and bases in the context of the data.
(b) Check the model for goodness-of-fit and use the model, where appropriate, to draw conclusions or make predictions.
2.05 Use rational equations to model and solve problems; justify results.
(a) Solve using tables, graphs, and algebraic properties.
(b) Interpret the constants and coefficients in the context of the problem.
(c) Identify the asymptotes and intercepts graphically and algebraically.
2.06 Use cubic equations to model and solve problems.
(a) Solve using tables and graphs.
(b) Interpret constants and coefficients in the context of the problem.
2.07 Use equations with radical expressions to model and solve problems; justify results.
(a) Solve using tables, graphs, and algebraic properties.
(b) Interpret the degree, constants, and coefficients in the context of the problem.
2.08 Use equations and inequalities with absolute value to model and solve problems; justify results.
(a) Solve using tables, graphs, and algebraic properties.
(b) Interpret the constants and coefficients in the context of the problem.
2.09 Use the equations of parabolas and circles to model and solve problems; justify results.
(a) Solve using tables, graphs, and algebraic properties.
(b) Interpret the constants and coefficients in the context of the problem.
2.10 Use systems of two or more equations or inequalities to model and solve problems; justify results. Solve using tables, graphs, matrix operations, and algebraic properties.