

# Wyoming Department of Education Required Virtual Education Course Syllabus

## Natrona County School District # 1

Program Name	Natrona Virtual Learning	Content Area	MA
Course ID	NCV02056.2	Grade Level	9, 10, 11, 12
Course Name	Algebra 2 Sem 2	# of Credits	0.5
SCED Code	02056G0.5022	Curriculum Type	Odysseyware

### COURSE DESCRIPTION

*Sem. 2 Algebra II is a high school math course intended for the student who has successfully completed the prerequisite course Algebra I and semester 1 of Algebra II. This course focuses on algebraic techniques and methods in order to develop student understanding of advanced number theory, concepts involving linear, quadratic and polynomial functions, and pre-calculus theories. This course also integrates geometric concepts and skills throughout the units, as well as introducing students to basic trigonometric identities and problem solving.*

### WYOMING CONTENT AND PERFORMANCE STANDARDS

STANDARD#	BENCHMARK (Standard/Indicator) Use the Standards and Benchmarks as Spreadsheets
N.RN.1	Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define $5^{1/3}$ to be the cube root of 5 because we want $[5^{1/3}]^3 = 5^{[(1/3) \times 3]}$ to hold, so $[5^{1/3}]^3$ must equal 5.
G.C.2	Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.
F.IF.7e	Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.*
S.CP.9	(+)Use permutations and combinations to compute probabilities of compound events and solve problems.*
F.TF.8	Prove the Pythagorean identity $(\sin A)^2 + (\cos A)^2 = 1$ and use it to find $\sin A$ , $\cos A$ , or $\tan A$ , given $\sin A$ , $\cos A$ , or $\tan A$ , and the quadrant of the angle.
S.ID.1	Represent data with plots on the real number line (dot plots, histograms, and box plots).*

### SCOPE AND SEQUENCE

UNIT OUTLINE	STANDARD#	OUTCOMES/OBJECTIVES/STUDENT CENTERED GOALS
Unit 1: Real Numbers	N.RN.1	Identify a number as Rational or Irrational Write the fractional equivalent of a Rational decimal number Change a radical expression to the equivalent expression with fractional exponents Evaluate and simplify radical expressions and fractional exponent expressions
Unit 2: Quadratic Relations and Systems	G.C.2	Use the distance formula to find the distance between two points. Find the radius of a circle from its equation. Graph the solution to a system of inequalities

Unit 3: Functions	F.IF.7e	Graph the absolute value function using transformations. Alternate between graphing and creating equations using characteristics of the absolute value function. Simplify expressions with fractional exponents. Express an exponential equation in logarithmic form.
Unit 4: Counting Principles	S.CP.9	Use sequences and patterns to create a model and make predictions. Evaluate factorial expressions. Explore the uses and limitations of probability theory. Calculate probabilities in single-step experiments.
Unit 5: Trigonometry	F.TF.8	Express trigonometric functions as ratios in terms of the sides of a right triangle. Evaluate trigonometric expressions. Use the Pythagorean theorem and trigonometric ratios to calculate side measures in right triangles.
Unit 6: Statistics	S.ID.1	To distinguish between complete information about a population and a sampling of the population. Students will be able to transfer information from a data set into a histogram.