Curriculum Mapping
Math – Algebra II
1st Semester
Jacob Stewart

Module 1 : Systems of Equations

Lesson	Indiana Standard(s)	Learning Targets and "I CAN" Statements	Resources/Activities	Pacing (in school days)	Assessments
1-6 Solving Systems of Equations	AII.SEI.1, AII.SEI.2	Students can solve systems of equations involving two variables. Write systems of equations involving real world problems and solve them.	-Textbook or e-Book Pages 42-49. -ConnectEd Website -ALEKS	1	Page 47: 1-27 or ALEKS Mid-Chapter Quiz Unit 1 Test
1-7 Solving Systems of Inequalities	AII.SEI.1, AII.SEI.2	Students can solve systems of inequalities by graphing. Determine coordinates of the vertices of a region formed by the graph of a system of inequalities. Determine whether the solutions are reasonable.	-Textbook or e-Book Pages 52-57 -ConnectEd Website -ALEKS	1	Pages 55-56: 7-25 or ALEKS Mid-Chapter Quiz Unit 1 Test
1-9 Solving Systems of Equations in Three Variables	AII.SEI.2, AII.SEI.3	Students can represent and solve real world systems of linear equations in three variables. Understand that the algebraic steps to solve two variable systems can be extended to systems of equations in three variables.	-Textbook or eBook Pages 67-71 -ConnectEd Website -ALEKS	2	Page 71: 1-19 Mid-Chapter Quiz Unit 1 Test
1-10 Solving Systems of Lines, Circles, and Parabolas	AI.SEI.1, AII.SEI.2, AII.SEI.3	Students can solve a system of equations consisting of a linear equation and a quadratic equation in two variables algebraically and graphically with and without technology.	-ALEKS	1	1-10 Worksheet Unit 1 Test

Module 2 : Relations and Functions

Lesson	Indiana Standard (s)	Learning Targets and "I CAN" Statements	Resources/Activities	Pacing (in school days)	Assessments
2-1 / 2-2 Relations, Functions, and Linear Functions	AII.F.4 PS.1	Students can identify linear and nonlinear functions by examining graphs or equations.	-Textbook or eBook Pages 92-100 -ConnectEd Website -ALEKS	1	Page 92: 17-37 Pages 99-100: 1-5, 10-19 ALEKS Unit 2 Test
2-5 Special Functions	AII.F.4, AII.PR.2, AII.PR.4,	Students can graph and analyze piecewise-defined functions with and without technology. Identify and describe features of piecewise-defined functions. Students can graph and analyze step and absolute value functions. Identify and describe features of step and absolute value functions.	-Textbook or eBook Pages 118-123 -ConnectEd Website -ALEKS	2	Pages 121-123: 1-34 ALEKS Unit 2 Test
2-6 Transformations of Functions	AII.F.4, AII.PR.2, AII.PR.4	Students can identify the effects on the graphs of functions by replacing f(x) with f(x) + k, kf(x), f(kx), and f(x + k) for specific values of k (both positive and negative) with and without technology. Find the value of k given the graph of f(x) and the graph of f(x) + k , kf(x), f(kx), or f(x + k).	-Textbook or eBook Pages 125-130 -ConnectEd Website -ALEKS	2	Pages 128-130: 1-38 ALEKS Unit 2 Test

Module 3 : Quadratic Functions

Lesson	Indiana Standard(s)	Learning Targets and "I CAN" Statements	Resources/Activities	Pacing (in school days)	Assessments
3-1 / 3-2 Solving Quadratic Equations by Graphing	AII.Q.1, AII.Q.3	Students can represent real world problems that can be modeled with quadratic functions using tables, graphs, and equations. Find and interpret the maximum and minimum values. Students can solve quadratic equations by graphing. Estimate solutions of quadratic equations by graphing.	-Textbook or eBook Pages 151-168 -ConnectEd Website -ALEKS	1	Page 156: 2-32 Even Pages 167-168: 2-40 Even ALEKS Mid-Chapter Quiz Unit 3 Test
3-3 Complex Numbers	AII.Q.1, AII.Q.4	Students can perform operations with pure imaginary numbers and complex numbers. Interpret the solutions to a quadratic equation.	-Textbook or eBook Pages 172-177 -ConnectEd Website -ALEKS	1	Pages 177-178: 18-41, 48-59 ALEKS Mid-Chapter Quiz Unit 3 Test
3-4 Solving Quadratic Equations by Factoring	AII.Q.1, AII.Q.3, AII.CNE.3	Students can write quadratic equations in standard form. Solve quadratic equations in standard form by factoring. Interpret the solutions and determine whether they are reasonable.	-Textbook or eBook Pages 179-185 -ConnectEd Website -ALEKS	2	Pages 184-185: 17-54 ALEKS Mid-Chapter Quiz Unit 3 Test
3-5 Completing the Square	AII.Q.2, AII.Q.3	Students can use completing the square to rewrite quadratic functions in vertex form and graph these functions with and without technology. Solve quadratic equations by completing the square.	-Textbook or eBook Pages 191-196 -ConnectEd Website -ALEKS	2	Page 195: 14-48 ALEKS Unit 3 Test
3-6 Quadratic Formula	AII.Q.1, AII.Q.4	Students can solve quadratic equations by using the Quadratic Formula. Use the discriminant to determine the number and type of solutions of a quadratic equation. Write complex solutions in the form $a \pm bi$ for real numbers a and b.	-Textbook or eBook Pages 199-206 -ConnectEd Website -ALEKS	1	Page 205: 14-33 ALEKS Unit 3 Test

Module 4 : Polynomials and Polynomial Functions

Lesson	Indiana Standard(s)	Learning Targets and "I CAN" Statements	Resources/Activities	Pacing (in school days)	Assessments
4-1 Operations with Polynomials	AII.PR.1	Students can multiply, divide, and simplify monomials and expressions involving powers. Add, subtract, and multiply polynomials.	-Textbook or eBook Pages 229-234 -ConnectEd Website -ALEKS	1	Pages 233-234: 16-50 ALEKS Mid-Chapter Quiz Unit 4 Test
4-3 Dividing Polynomials	AII.PR.1, AII.CNE.3, AII.CNE.4	Students can divide polynomials using long division. Divide polynomials using synthetic division. Rewrite rational expressions in different forms; write a(x)/b(x) in the form q(x) + r(x)/b(x), where a(x), b(x), q(x), and r(x) are polynomials with the degree of r(x) less than the degree of b(x).	-Textbook or eBook Pages 242-248 -ConnectEd Website -ALEKS	2	Page 247: 1-33 ALEKS Mid-Chapter Quiz Unit 4 Test
4-4 / 4-5 Analyzing Graphs of Polynomial Functions	AII.PR.1, AII.PR.2, AII.PR.3	Students can solve real world and other mathematical problems involving polynomial equations with and without technology. Identify and describe features of polynomial function graphs.	-Textbook or eBook Pages 253-268 -ConnectEd Website -ALEKS	1	Pages 258-259: 15-28, 35-40 Page 266: 5-22 ALEKS Mid-Chapter Quiz Unit 4 Test
4-6 Solving Polynomial Equations	AII.PR.1, AII.PR.3, AII.CNE.4	Students can solve polynomial equations by factoring. Solve real world and other mathematical problems involving polynomial equations. Interpret the solutions and determine whether the solutions are reasonable.	-Textbook or eBook Pages 274-280 -ConnectEd Website -ALEKS	1	Pages 278-279: 20-68 Even ALEKS Unit 4 Test
4-8 The Remainder and Factor Theorem	AII.PR.1, AII.PR.3, PS.4	Students can evaluate functions by using synthetic substitution. Determine whether a binomial is a factor of a polynomial by using synthetic substitution. Know and apply the remainder theorem. Identify zeros of polynomials.	-Textbook or eBook Pages 287-292 -ConnectEd Website -ALEKS	1	Page 290: 1-28 ALEKS Unit 4 Test
4-9 Roots and Zeros	AII.PR.1, AII.PR.3,	Students can determine the number and type of roots for polynomial equations. Find the zeros of a polynomial function. Apply the Fundamental Theorem of Algebra and Descartes' Rule of Signs.	-Textbook or eBook Pages 293-299 -ConnectEd Website -ALEKS	2	Pages 298-299: 1-45 Odd ALEKS Unit 4 Test

Curriculum Mapping
Math – Algebra II
2nd Semester

Module 5 : Inverse and Radical Functions

Lesson	Indiana Standard(s)	Learning Targets and "I CAN" Statements	Resources/Activities	Pacing (in school days)	Assessments
5-1 Operations with Functions	AII.F.1, PS.2, PS.7	Students can perform and apply arithmetic operations with functions. Understand composition of functions and combine functions using composition.	-Textbook or eBook Pages 315-320 -ConnectEd Website -ALEKS	1	Pages 318-319: 2-38 Even ALEKS Mid-Chapter Quiz Unit 5 Test
5-2 Composition of Functions	AII.F.1	Students can understand composition of functions and combine functions using composition.	-Textbook or eBook Pages 322-327 -ConnectEd Website -ALEKS	1	Pages 325-326: 15-42 ALEKS Mid-Chapter Quiz Unit 5 Test
5-3 Inverse Functions and Relations	AII.F.2, AII.F.3	Students can find the inverse of a function or relation. Verify functions are inverses algebraically and graphically. Understand that if the graph of a function contains a point (a, b), then the graph of the inverse of the function contains the point (b, a). Know the inverse is a reflection over the line y = x.	-Textbook or eBook Pages 329-334 -ConnectEd Website -ALEKS	1	Page 333: 2-38 Even, 39 ALEKS Mid-Chapter Quiz Unit 5 Test
5-4 Graphing Square Root Functions	AII.F.4, AII.PR.2,	Students can graph and analyze square root (radical) functions. Identify the effect on the graph by replacing f(x) with f(x) + k, kf(x), f(kx), and f(x +k) for specific values of k (both positive and negative).	-Textbook or eBook Pages 338-343 -ConnectEd Website -ALEKS	1	Page 341: 13-30 ALEKS Unit 5 Test
5-6 Solving Radical Equations	AII.PR.1, AII.CNE.1, AII.CNE.2	Students can solve radical equations. Explain how extending the properties of integer exponents to rational numbers allows for a notation for radicals in terms of rational exponents. Rewrite expressions involving radicals and rational exponents using the properties of exponents. Give examples showing how extraneous solutions may arise.	-Textbook or eBook Pages 352-357 -ConnectEd Website -ALEKS	1	Page 356: 23-47 ALEKS Unit 5 Test

Module 6 : Exponential and Logarithmic Functions

Lesson	Indiana Standard (s)	Learning Targets and "I CAN" Statements	Resources/Activities	Pacing (in school days)	Assessments
6-1 Graphing Exponential Functions	AII.EL.1, AII.EL.6	Students can graph exponential growth and exponential decay functions. Recognize that the transformations of functions can be used with Exponential Functions.	-Textbook or eBook Pages 373-379 -ConnectEd Website -ALEKS	1	Pages 378: 13-27 ALEKS Mid-Chapter Quiz Unit 6 Test
6-2 Solving Exponential Equations and Inequalities	AII.EL.5, AII.EL.6	Students can solve exponential equations and inequalities. Use the properties of exponents to rewrite expressions. Represent real world problems using exponential functions and solve.	-Textbook or eBook Pages 383-388 -ConnectEd Website -ALEKS	1	Page 386: 1-29 ALEKS Mid-Chapter Quiz Unit 6 Test
6-4 Logarithms and Logarithmic Functions	AII.EL.1, AII.EL.4, AII.EL.6	Students can evaluate logarithmic expressions. Graph logarithmic functions. Use the properties of exponents to derive the properties of logarithms. Solve logarithmic equations. Represent real world problems using Logarithmic Functions and solve.	-Textbook or eBook Pages 397-403 -ConnectEd Website -ALEKS	1	Page 401: 2 - 48 Even Mid-Chapter Quiz Unit 6 Test
6-6 Properties of Logarithms	AII.EL.3, AII.EL.4, AII.EL.6	Students can simplify and evaluate expressions using the properties of logarithms. Solve logarithmic equations using the properties of logarithms.	-Textbook or eBook Pages 416-421 -ConnectEd Website -ALEKS	2	Pages 419-420: 2-58 Even ALEKS Mid-Chapter Quiz Unit 6 Test
6-7 Common Logarithms	AII.EL.4, AII.EL.5, AII.EL.6	Students can solve exponential equations and inequalities using common logarithms. Evaluate logarithmic expressions using the Change of Base Formula.	-Textbook or eBook Pages 423-428 -ConnectEd Website -ALEKS	1	Pages 426-427: 12-52 Even ALEKS Unit 6 Test
6-8 Natural Logarithms	AII.EL.4, AII.EL.5	Students can evaluate expressions involving the natural base and natural logarithm. Solve exponential equations and inequalities using natural logarithms. Represent real world problems using Natural Logarithms and solve.	-Textbook or eBook Pages 430-435 -ConnectEd Website -ALEKS	1	Page 434: 2-44 Even ALEKS Unit 6 Test

6-9 Solving Logarithmic Equations and Inequalities	AII.EL.5, AII.EL.6	Students can solve logarithmic equations and inequalities. Use the properties of exponents to rewrite logarithmic equations and solve.	-Textbook or eBook Pages 430-435 -ConnectEd Website -ALEKS	1	Pages 439-440: 14-35 ALEKS Unit 6 Test

Module 7 : Rational Functions

Lesson	Indiana Standard(s)	Learning Targets and "I CAN" Statements	Resources/Activities	Pacing (in school days)	Assessments
7-1 Multiplying and Dividing Rational Expressions	AII.CNE.3, AII.CNE.4	Students can simplify rational expression and complex fractions. Rewrite rational expressions in equivalent forms using properties of exponents and factoring methods.	-Textbook or eBook Pages 467-474 -ConnectEd Website -ALEKS	2	Page 472: 13-39 ALEKS Mid-Chapter Quiz Unit 7 Test
7-2 Adding and Subtracting Rational Expressions	AII.CNE.3, AII.CNE.4,	Students can determine the least common multiple of polynomials. Add and subtract rational expressions. Rewrite rational expressions in equivalent forms using the Least Common Multiple.	-Textbook or eBook Pages 476-481 -ConnectEd Website -ALEKS	1	Pages 479-480; 5-17, 36-52 E ALEKS Mid-Chapter Quiz Unit 7 Test
7-4 Graphing Rational Functions	AII.PR.2, AII.PR.3	Students can graph rational functions with vertical and horizontal asymptotes. Graph rational functions with oblique asymptotes and point discontinuity.	-Textbook or eBook Pages 491-497 -ConnectEd Website -ALEKS	2	Page 496: 8-34 Even Unit 7 Test
7-6 Solving Rational Equations and Inequalities	AII.PR.1, AII.PR.3	Students can solve rational equations and inequalities. Give examples showing how extraneous solutions may arise. Solve real world and other mathematical problems involving rational equations.	-Textbook or eBook Pages 508-515 -ConnectEd Website -ALEKS	2	Pages 514-515: 1-8, 12-32 Unit 7 Test

Module 8 : Statistics and Probability

Lesson	Indiana Standard(s)	Learning Targets and "I CAN" Statements	Resources/Activities	Pacing (in school days)	Assessments
8-1 Random Sampling	AII.DSP.1	Students can distinguish among sample surveys, experiments, and observational studies. Make inferences about population parameters based on random samples of population.	-Textbook or eBook Pages 531-536 -ConnectEd Website -ALEKS	1	Pages 534-535: 1-23 ALEKS Mid-Chapter Quiz Unit 8 Test
8-2 Using Statistical Experiments	AII.DSP.2, AII.DSP.4	Students can collect and analyze data by conducting simulations of real life situations. Use data to compare theoretical and experimental probabilities. Decide if a specified model is consistent with results from a simulation.Use simulations to decide if differences between parameters are significant.	-Textbook or eBook Pages 538-543 -ConnectEd Website -ALEKS	2	Pages 541-542: 1-14 ALEKS Mid-Chapter Quiz Unit 8 Test
8-3 Population Parameters	AII.DSP.2, AII.DSP.3, AII.DSP.4	Students can use data from sample surveys to estimate population means or proportions. Develop margins of error by using simulation models.	-Textbook or eBook Pages 538-543 -ConnectEd Website -ALEKS	1	Pages 548-549: 1-25 ALEKS Mid-Chapter Quiz Unit 8 Test
8-4 Distributions of Data	AII.DSP.1, AII.DSP.2	Students can use the shapes of distributions to select appropriate statistics. Use the shapes of distributions to compare data. Understand the effects of outliers on the statistical summary of data.	-Textbook or eBook Pages 551-558 -ConnectEd Website -ALEKS	2	Pages 556-557: 1-9 ALEKS Mid-Chapter Quiz Unit 8 Test
8-5 Evaluating Published Data	AII.DSP.1, AII.DSP.2 AII.DSP.4	Students can evaluate reports based on data. Identify and explain misleading uses of data. Decide if a specified model is consistent to the results given.	-Textbook or eBook Pages 561-564 -ConnectEd Website -ALEKS	1	Pages 563-564: 1-11 ALEKS Unit 8 Test
8-6 Normal Distributions	AII.DSP.5, AII.DSP.6	Students can use the Empirical Rule to analyze normally distributed variables. Apply the standard normal distribution and z values. Use the mean and standard deviation of a data set to fit it to a normal distribution. Estimate population percentages.	-Textbook or eBook Pages 566-571 -ConnectEd Website -ALEKS	2	Pages 570-571: 1-20 ALEKS Unit 8 Test
8-7 Using	AII.DSP.5,	Students can use probability to make fair	-Textbook or eBook Pages	1	Pages 576-577: 1-15

Probability to Make Decisions	AII.DSP.6	decisions. Analyze decisions using probability concepts. Calculate probabilities of dependent and independent events.	573-577 -ConnectEd Website -ALEKS		ALEKS Unit 8 Test