Hickman County Curriculum Map
PreCalculus
Second Nine Weeks

Course Level Expectations	Checks for Understanding	Student Performance Indicator(s)
CLE 3126.2.5 Be able to calculate standards vector arithmetic and vector length. CLE 3126.2.6 Recognize vectors as elements (i.e. numbers) that have their own form of arithmetic operations in their own system of elements. CLE 3126.2.7 Recognize series as an identification of a number which can be identified as a specific numeral or only approximated. CLE 3126.3.7 Solve nonlinear inequalities (quadratic, trigonometric, conic, exponential, and logarithmic). CLE 3126.3.8 Understand the properties of conic sections (whether displayed in equation or graphical form) and apply conic sections to model real-world phenomena.	3126.1.3 Correctly use summation notation; expand and collect expressions in both finite and infinite settings. 3126.1.7 Analyze situations, develop mathematical models, or solve problems using linear, polynomial, trigonometric, exponential, or logarithmic equations or inequalities symbolically or graphically. 3126.1.8 Draw qualitative graphs (sketches) of functions (linear, quadratic, cubic, square root, absolute value, reciprocal, trigonometric, exponential, logarithmic, and greatest integer) and describe their general shape/trend. 3126.1.11 Discuss interpolation vs. extrapolation and the validity of the resulting estimates. 3124.1.12 Discuss the changes in mathematics that arose through the development of function notation, Cartesian coordinates, base e, and other mathematical ideas discussed in pre-calculus. 3124.1.14 Establish accurate and consistent use of units in the presentation of answers to applied questions. 3124.1.15 Use graphing calculators and computer spreadsheets to analyze qualities of a function	

CLE 3126.3.9 Simulate motion using parametric equations. CLE 3126.3.10 Derive and use the formulas for the general term and summation of finite or infinite arithmetic and geometric series, if they exist. CLE 3126.3.11 Develop the concept of a limit by examining sequences and series. CLE 3124.4.5 Apply vectors to solve real world problems. CLE 3124.4.6 Represent situations and solve problems involving polar coordinates. CLE 3124.4.8 Understand the geometric interpretation of vectors and their use in real life analysis of problems. CLE 3124.4.9 Develop an understanding of the graphic representation of vectors and vector arithmetic.	CLE 3126.2.1 Understand the capabilities and the limitations of calculators and computers in solving problems. CLE 3126.2.5 Be able to calculate standards vector arithmetic and vector length. CLE 3126.2.6 Recognize vectors as elements (i.e. numbers) that have their own form of arithmetic operations in their own system of elements. CLE 3126.2.7 Recognize series as an identification of a number which can be identified as a specific numeral or only approximated. 3126.3.17 Solve nonlinear inequalities by graphing (solutions in interval notation if one-variable) by hand and with appropriate technology. 3126.3.18 Solve systems of nonlinear inequalities by graphing. 3126.3.19 Graph ellipses and hyperbolas and demonstrate understanding of the relationship between their standard algebraic form and the graphical characteristics. 3126.3.21 From an equation in standard form, graph the appropriate conic section. 3126.3.22 Graph curves parametrically (by hand and with appropriate technology).	

CLE 3126.5.2 Model a data using a variety of transcendental and polynomial models; when possible, determine the best model. CLE 3125.5.3 Recognize and explain the potential errors caused by extrapolating from data.	3126.3.23 Eliminate parameters by rewriting parametric equations as a single equation. 3126.3.24 Understand the series represent the approximation of a number when truncated; estimate truncation error in specific examples. 3126.3.25 Understand that lengths of curves and areas of curved regions can be defined using the informal notion of limit. 3126.3.26 Construct the difference quotient for a given function and simplify the resulting expression. 3126.4.11 Graph functions in polar coordinates. 3126.4.12 Convert between rectangular and polar coordinates. 3126.4.16 Understand that vectors are determined by the coordinates of their initial and terminal points, or by their components. 3126.4.17 Use vectors to model velocity and direction to solve problems. 3126.4.18 Approximate the area under a curve geometrically by constructing a finite number of rectangles and calculating the total area in those rectangles.	

3126.4.19 Compare two different approximations of area under a curve by using a different number of rectangles.

3126.5.1 Explain how to determine the best regression equation model that approximates a particular data set.

3126.5.2 Find the quadratic or exponential regression equations for a data set using a graphing calculator, spreadsheet, and/or estimation.

3126.5.3 Find the equation of the regression line that best fits data with a linear trend.

3126.5.4 Find the regression equation that best fits exponential data.

3126.5.5 Use interpolation to calculate a new data point between two existing data points and identify potential errors.

3126.5.6 Use extrapolation to construct new data points that fit a given trend and identify potential errors.