

- SLO#1: Cite the six fundamental trigonometric functions and be able to interpret and evaluate them
- define the trigonometric functions using right triangles and/or the unit circle
- evaluate the trigonometric functions using reference angles and special triangles
- calculate the values of the trigonometric functions using a calculator with angles in both degrees and radians
- SLO#2: Solve application problems by modeling them with appropriate functions
- recognize what type of function might be best to use in a given situation to model an applied problem
- distinguish between the various ways of solving application problems with trigonometric methods including the use of right triangles, oblique triangles, the law of sines, and the law of cosines
- use a polynomial, rational, exponential, logarithmic, or trigonometric function to model and solve an application
- analyze applications involving exponential and logarithmic growth and decay
- SLO#3: Graph a library of functions including trigonometric, polynomial, rational, absolute value, exponential, and logarithmic functions
- recognize a base graph when given the formula for a complex function
- employ the use of translations, reflections and nonrigid transformations to graph a function once the base graph is known
- express the domain and range of a function in interval notation given a formula or a graph of the function
- recognize important characteristics of graphs of functions including asymptotic behavior, periodic behavior, zeros, and end behavior patterns
- identify a function as even, odd or neither and be able to prove result
- extend quadratic functions to include methods for finding vertices, finding and interpreting intercepts, and minimizing and maximizing functions
- graph points and curves in the polar coordinate system
- SLO#4: Categorize types of equations, systems and inequalities and methods used to solve them
- employ algebraic and graphical methods to solve polynomial, rational, and absolute value equations, systems and inequalities
- use matrix methods to solve systems of equations including the Gauss-Jordan method
- recognize when to use logarithms to solve an equation
- integrate algebraic techniques with known identities to prove trigonometric identities
- solve trigonometric equations and be able to express solutions when restricted to an interval or when there are an infinite number of solutions
- use inverse trigonometric functions to solve an equation
- use sign graphs and graphs of functions to solve inequalities
- SLO#5: Manipulate mathematical expressions to accomplish a specific goal
- simplify and factor expressions when solving equations, working with rational expressions, and finding the difference quotient
- employ properties of exponents and logarithms to manipulate expressions
- use trigonometric identities to rewrite or expand an expression and to do proofs
- write equations of conic sections in standard form to graph them
- analyze conic sections using foci, directrices and asymptotes
- convert points and equations from polar coordinates to rectangular coordinates and the reverse