MATH 140C : Precalculus

Topics include, rational functions, polynomial and rational inequalities, right triangle trigonometry, graphs of trigonometric functions, trigonometric identities and equations, oblique triangles, polar coordinates and equations, vectors, systems of equations and inequalities, matrices, rotation of conic sections, counting methods, binomial theorem, and limits. A graphing calculator is required.

Credits 4
Lab/Practicum/Clinical Hours 0
Lecture Hours 4
Prerequisite Courses
MATH 124C
Prerequisites
Recommendation of Math Department based on placement testing
Learning Outcomes
- Graph and evaluate rational and polynomial functions.
- Solve applied problems involving right triangles and trigonometric functions.
- Compute the values of trigonometric functions for key angles in all quadrants of the unit circle measured in both degrees and radians.
- Analyze and graph trigonometric functions and their transformations.
- Prove trigonometric identities.
- Solve right and oblique triangles.
- Solve trigonometric equations.
- Graph and transform equations in polar coordinates and using parametric equations.
- Perform operations on and graph complex numbers.
- Apply vector operations and use vectors to solve applications.
- Solve systems of equations using matrix methods.
- Graph and solve nonlinear system of equations and inequalities.
- Analyze equations of and graph rotations of conic sections.
- Prove infinite sequences of statements through mathematical induction.
- Evaluate expressions containing factorials with permutations, combinations, and apply to Pascal's triangle.