



Course Number Course Name	Math 1250 Trigonometry and Pre-Calculus
Credit Value (Breakdown of theory and lab credits)	4 Theory
Catalog Course Description	Trigonometry & Pre-Calculus includes the study of functions in general with emphasis on the elementary functions: algebraic, exponential, logarithmic, trigonometric and inverse trigonometric functions. Topics include rates of change, limits, systems of equations, conic sections, sequences and series, trigonometric equations and identities, complex number, vectors, and applications. Prerequisite: MATH 1220. (4, 4T+0S)
Student Learning Outcomes/Objectives /Competencies of the Course	<p>Student Learning Outcomes</p> <ol style="list-style-type: none"> 1. Students will be able to define and evaluate the trigonometric functions as functions of angle in both degree and radian measure using the definitions in terms of x, y, and r; as the ratio of sides of a right triangle; using the unit circle; using reference angles, commonly used (0°, 30°, 45°, 60°, 90°) angles and using a calculator. 2. Students will be able to solve right triangles. They will be able to draw a sketch in an applied problem when necessary. 3. Students will be able to solve non-right triangles using the law of sines and the law of cosines. 4. Students will be able to prove trigonometric identities and apply addition and subtraction, double-angle, half-angle and power reduction formulas. 5. Students will be able to graph the six trigonometric functions, their transformations and their inverses. 6. Students will be able to use algebraic methods, including the use of identities and inverses, to solve trigonometric equations and demonstrate connections to graphical and numerical representations of the solutions. 7. Students will be able to add and subtract vectors in two dimensions. They will be able to use the dot product to project one vector onto another and to determine the angle between two vectors. They will be able to solve a variety of word problems using vectors. 8. Students will be able to work with polar coordinates; this includes graphing in polar coordinates and transforming an equation with polar coordinates into one with rectangular coordinates, and vice versa. 9. Students will be able to work with the trigonometric form of complex numbers, including using De Moivre's formula.

NORTHERN NEW MEXICO COLLEGE



College-Wide Student Learning Outcomes

Math 1250 learning objectives align with the following NNMC College Wide Goal:

Critical thought: Students are required to analyze and synthesize information and draw reasoned conclusions.