

NorthWest Arkansas Community College
Division of Science and Mathematics

Course Number and Title

MATH 1213 Plane Trigonometry

Catalog Description

A survey of basic trigonometric concepts. Topics include a review of functions and graphs, the trigonometric functions, graphs of trigonometric functions, inverse trigonometric functions, trigonometric identities and equations, applications of trigonometry, complex numbers, and polar coordinates and equations. Computer assisted, WWW, or hybrid versions of this course may be offered in addition to the traditional format.

Prerequisites

MATH 1203 with a grade of C or better, or appropriate placement scores

Credit hours/Contact hours/Load hours

3 credit hours/ 3 contact hours/ 3 load hours

Target Audience/Transferability

Trigonometry is required for students who will take Calculus I and / or College Physics. It is designed to transfer as 3 credit hours of Plane Trigonometry.

Student Learning Outcomes

Upon successful completion of this course students should exhibit mastery of certain knowledge and basic skills. These skills include, but are not limited to:

1. Recognize and use the vocabulary of angles, analyze and classify angles, and convert between units
2. Apply concepts of linear and angular velocity, arc length, and area of circular sectors
3. Define, apply, and find the exact values of the six trigonometric functions using right triangles and the unit circle
4. Graph the six trigonometric functions by hand
5. Analyze and write equations of simple harmonic motion
6. Verify and apply trigonometric identities
7. Solve trigonometric equations
8. Define, use, and apply inverse trigonometric functions
9. Define, use, and apply the Law of Sines and Law of Cosines
10. Recognize and use the vocabulary of vectors (vector, scalar, magnitude, direction) to perform arithmetic on vectors and to solve application problems
11. Convert complex numbers between standard and trigonometric form
12. Convert between parametric and rectangular equations of curves and graph parametric curves

13. Convert between rectangular & polar coordinates and graph polar coordinates and equations

Topics

1. Angles
2. Trigonometric Functions
3. Graphs of Trigonometric Functions
4. Trigonometric Identities
5. Inverse Trigonometric Functions
6. Vectors
7. Laws of Sines and Cosines
8. Analyzing & Classifying Angles
9. Parametric Equations
10. Polar coordinates and graphing.
11. Complex numbers

Forms of Assessment

Assessment of student learning outcomes will be administered according to the math department's current assessment plan.