

# Trigonometry Training for Industry | Online Math eLearning Course

**Trigonometry - WXMA304-XX01XEN-E2**

Objective 11: Define Trigonometric Ratios and Explain How to Calculate Sine, Cosine, and Tangent

**Real-World Uses of Trigonometry Ratios**

In CNC programming, these **trigonometric** ratios are most often used to calculate the correct cutting paths needed to create a specific part.

Another modern use of trigonometry is a Global Positioning System, commonly called GPS. This system uses trigonometric ratios to **estimate** distances between locations on the surface of the earth.

A diagram illustrating the use of trigonometry in GPS technology. It shows a triangle with vertices at a satellite in space and two locations on the Earth's surface. The base of the triangle, representing the distance between the two locations, is labeled '450 Miles'. The angles at the vertices are labeled: 49° at the left location, 78° at the satellite, and 53° at the right location. The background shows a night sky with stars and a silhouette of a city skyline.

## eLearning Course: MXMA304

Amatrol's Trigonometry eLearning training course (MXMA304) covers the Cartesian coordinate system and angles, triangles and the Pythagorean theorem, basic trigonometry, circles and semicircles, and applications of trigonometry in manufacturing. This online training course provides an in-depth study of right triangle trigonometry and its applications to practical manufacturing calculations. The learner studies the foundations of trigonometry, including lines, components and types of angles, and angle measurement. Topics of focus include triangles, the Pythagorean Theorem, understanding and calculating trigonometric ratios and inverse functions, and the components of circles and their relationship to angles.

### In-Depth Trigonometry Curriculum

#### What is the Cartesian Coordinate System?

The Cartesian coordinate system is a mathematical grid that identifies a specific point on a plane or in space. The two-dimensional Cartesian coordinate system is the foundation for how trigonometry is used in CNC programming. The Cartesian coordinate system lies at the core of the programming process. It allows the CNC control to translate the instructions within a program into movements of the machine components. The program allows a machine to connect multiple points along a plane to create straight or curved lines to precisely create a part.

### Interactive eLearning with Learning Management System

#### Highly-Interactive Multimedia Format Appeals to All Learning Styles

Amatrol's trigonometry eLearning course features interactive eLearning curriculum that integrates various types of learning methods to create an engaging, effective learning experience. Amatrol's multimedia [eLearning](#) curriculum includes text with voiceovers, videos, 3D animations, pictures, and interactive activities, quizzes, and self-reviews.

#### Free Learning Management System (LMS)

Amatrol eLearning is easy-to-use for both students and instructors. Its web-based interface is simple to navigate and available on any WebGL-compatible Internet browser. Instructors love Amatrol eLearning for its simple, yet sophisticated Learning Management System (LMS). The LMS allows instructors to create custom courses, monitor student participation, track course progress, assess knowledge levels prior to a course, and test knowledge levels after completion. Learners appreciate the fact that they can start and stop as needed, moving through each Amatrol course at their own pace. If a self-review reveals that they didn't understand a particular topic as well as they thought they did, they can revisit it before moving on.

## **Additional Info**

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### **Requires:**

- Computer (see [Computer Requirements](#))

### **Options:**

- Amatrol SkillTrace Software (94-ST1)

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#### **Address**

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