

# MFG 111 - MATH FOR MANUFACTURING

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## Course Description

This course will apply principles of mathematics, geometry, and basic trigonometry to applications in manufacturing. Topics will include proportions, calculation of machine speed and feed and geometric relationships of triangles and circles. Problem solving will require the use of the Pythagorean Theorem and the sine, cosine, and tangent functions to solve right triangles. The Law of Sines and Law of Cosines will be used to solve oblique triangle applications. Group 2 course.

## Credit Hours

3

## Contact Hours

3

## Lecture Hours

3

## General Education Outcomes supported by this course

Quantitative Reasoning

## Course Learning Outcomes

### Knowledge:

- Show proper usage of addition, subtraction, multiplication, and division.
- Describe the process to convert between fractions and decimals.
- Define the terms associated with plane geometry and triangle trigonometry.

### Application:

- Apply appropriate procedures in simplifying mathematically expressions and solving equations.
- Calculate proportions, ratios, and percentages.
- Calculate the volume or surface area of an object.

### Integration:

- Relate mathematical procedures and methods to determine the cost and weight of materials based on volume or surface area of an object.
- Evaluate technical applications using triangle trigonometry.

### Human Dimension:

- Collaborate with a team, recognizing their responsibility for group success.

### Caring - Civic Learning:

- Recognize the impact mathematics has on manufacturing and skilled trades.

### Learning How to Learn:

- Develop problem-solving strategies for various real-life technical situations.