MET-1050: APPLIED MATHEMATICS FOR ENGINEERING TECHNOLOGY

Cuyahoga Community College

Viewing: MET-1050 : Applied Mathematics for Engineering Technology

Board of Trustees:

May 2019

Academic Term:

Fall 2019

Subject Code

MET - Mech Eng/Manuf Ind Eng Tech

Course Number:

1050

Title:

Applied Mathematics for Engineering Technology

Catalog Description:

Application of applied quantitative procedures to typical manufacturing, warehouse, and construction situations. Covers use of decimals, fractions, geometric properties, right angle trigonometry and vectors, and common unit conversions. Concepts are applied to reading engineering drawings, use in various warehouse operations, dimensioning parts, and solving systems of equations.

Credit Hour(s):

1

Lab Hour(s):

3

Requisites

Prerequisite and Corequisite

MATH-0910 Basic Arithmetic and Pre-Algebra, or appropriate Math placement score to place into MATH-0955 Beginning Algebra, or MET-1040 Foundations of Manufacturing.

Outcomes

Course Outcome(s):

Apply quantitative analysis in manufacturing/industrial/construction and allied area decision making.

Essential Learning Outcome Mapping:

Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

Objective(s):

1. Perform calculations related to common fractions and decimal fractions based on a given set of engineering drawings.
2. Apply percentage calculations based on given proportions for a project to determine the correct amount of material needed.
3. Use exponents to calculate expected rate of equipment decay.
4. Solve system of algebraic equations to optimize warehouse operations.
5. Describe the forces in a closed static system using trigonometric vector calculations.

Course Outcome(s):

Describe the importance of measurement units, methods of conversion, and appropriate applications.

Essential Learning Outcome Mapping:

Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

Quantitative Reasoning: Analyze problems, including real-world scenarios, through the application of mathematical and numerical concepts and skills, including the interpretation of data, tables, charts, or graphs.

Objective(s):
1. Perform calculations related to common fractions and decimal fractions as related to engineering drawings.
2. Explain properties of geometry that can be used when performing calculations in engineering drawings.

Methods of Evaluation:
1. Quizzes
2. Lab Assignments
3. Case Studies
4. Course Project

Course Content Outline:
As applied to industrial applications
1. -Common Fractions
2. -Decimal Fractions
3. -Percentages
4. -Powers and Roots
5. -Algebraic Properties
6. -Systems of Linear Equations
7. -Ratio and Proportions
8. -Geometric Properties
9. -3D Geometric Figures
10. -Right Triangle Trig
11. -Angles and Arc Length
12. -Vectors
13. -Measuring Tools
14. -Converting Units
15. -Scientific and Engineering Notation

Resources Other
1. Engineering Drawing and Design Math Applications (attached in Attached Files section)
2. Khan Academy
3. Math-in-Motion (YTA) laboratory packages
4. Wright State University Model for Engineering Math Education https://engineering-computer-science.wright.edu/research/engineering-mathematics/the-wright-state-model-for-engineering-mathematics-education

Top of page
Key: 4535