TECH PREP/MTAG CURRICULUM

Applied Mathematics

Lesson Plan

Time Allotment: 9 hours
Prepared By: Tom Murray, W. Longman, D. Klover, J. Imre, S. Bernhardt
Contact: John King (jtking@u.washington.edu)

MODULE DESCRIPTION

This module exposes students to common applications of mathematics within manufacturing and provides opportunities to develop proficiency in arithmetic calculations.

MODULE OUTCOME

After completing this module, students should be able to convert between USCS, fractional, and metric measurements and consult tolerances to properly dimension parts.

MTAG COMPETENCIES INTRODUCED

B2.2 Compute calculated measurements
B5.1 Convert between USCS and metric measurement systems
B5.2. Convert fractional measurements to decimal measurements
F1.1 Perform basic arithmetic functions

PERFORMANCE CRITERIA

- Given a drawing with USCS measurements and a copy of the same drawing with no measurements, the student will be able to dimension the second drawing with metric equivalents
- Using a pencil and paper, the student will be able to convert ten different fractional measurements to decimal measurements to the thousandth decimal place.
- The student with be able to perform basic addition, subtraction, multiplication, and division using decimals, fractions, ratios, and percentages.

SEQUENCING

Introduction
Working with Decimals
Adding Fractions and Mixed Numbers
Practice with Mixed Fractions

Application: Working with Fractions
Skill Check 1: Working with Fractions
Converting Fractions into Decimals
Working with Tolerances
Practice with Tolerances
Application: Working with Tolerances
Skill Check 2: Working with Tolerances
The Metric System
Practice with the Metric System
Skill Check 3: Converting From English to Metric Units
Final Skill Check
Module Evaluation

EQUIPMENT AND SUPPLIES NEEDED

Whiteboard/chalkboard
Overhead projector

INDEX OF INSTRUCTIONAL MATERIALS

RECOMMENDED STUDENT PREREQUISITES

None