ATMT-1100: MANUFACTURING SKILLS I

Cuyahoga Community College

Viewing: ATMT-1100 : Manufacturing Skills I

Board of Trustees:
2000-01-27

Academic Term:
Spring 2019

Subject Code
ATMT - Appd Ind Tech-ManufacturingTec

Course Number:
1100

Title:
Manufacturing Skills I

Catalog Description:
Stresses relationship of engineering drawing to applications of manufacturing part including lines, views, dimensioning, metric system, calculating cut of points, freehand lettering, sketching, and use of drafting tools to construct blueprint. Includes fraction to decimal conversion, drafting line using geometric equations, line types, orthographic views, isometric views, offset sections, auxiliary sections, symbols, and broken sections.

Credit Hour(s):
3

Lecture Hour(s):
3

Requisites

Prerequisite and Corequisite
Departmental approval: sponsorship in approved apprenticeship program offered by a member company, or acceptance to PMT certificate program.

Outcomes

Course Outcome(s):
N/A

Objective(s):
1. Explain the importance of engineering drawing as a universal language for communicating complete information about a part or an assembly of many parts.
2. Describe basic industrial practices of preparing original hard copy drawings.
3. Identify the need for national drafting room standards and standards-setting organizations.
4. Recognize elements that are common to drawings and the need to master drawing standards and principles and to apply these to everyday drawings.
5. Compare different drawing reproduction processes and types of prints and processes.
6. Recognize the different characteristics and features of linear measurement and basic units of measurements in customary geometric, inch and metric systems.
7. Discuss the detail required in at least three views.

Methods of Evaluation:
1. Quizzes
2. Exams
3. Classroom participation

Course Content Outline:

1. Sketches and drawings
   a. Lettering
   b. Fractions
   c. Decimals
   d. Overlay
   e. One view sketches
   f. Standards on drafting.
2. Drafting equipment and calculations
   a. T-square
   b. Drawing sheets
   c. Scales
   d. Drafting machines
   e. Calculators
   f. Engineers scale
   g. Drawing scales
3. Drawings as related to the manufacturing of a part
   a. Graphic interpretation
   b. Theory of dimensioning
   c. Angles and chamfers
   d. Tapers
   e. Dimensioning curves
   f. Notes for dimensions
   g. Assembly drawings
4. Sketches, drawings and calculations
   a. Non-isometric lines
   b. Isometric sketches
   c. Isometric axis
   d. Oblique circles
   e. Mathematical oblique layout calculations
   f. Pictorial drawings
5. Sketches and drafting techniques through equations
   a. Freehand sketches of a part
   b. Calculating a geometric application of a part
   c. Lines, points and plains
   d. Fraction to decimal equations
   e. Sketching an electrode
6. Constructing two view drawings
   a. Construction on two views
   b. Title box content
   c. Materials lists
   d. Revision areas
7. Three view drawings
   a. View placement
   b. Names of views
   c. Alphabet of lines
   d. Sectional views
   e. Offset sections
   f. Revolved views
   g. Symbols
8. Auxiliary views
   a. Projection
   b. Primary views
   c. Partial views
   d. Secondary views

Resources

Olivo, Thomas. *Basic Engineering Drawing and Sketching.* 6th ed. Delmar Pub., 1993.

Krar, Steve and Check Albert. *Technology of Machine Tools.* Westerville: Glencoe/McGraw-Hill, 1997.

Walker, John. *Machining Fundamentals.* South Holland: Goodheart-Wilcox, 1993.

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