

ATMT-1110: MANUFACTURING SKILLS II

Cuyahoga Community College

Viewing: ATMT-1110 : Manufacturing Skills II

Board of Trustees:

September 2025

Academic Term:

Fall 2025

Subject Code

ATMT - Appd Ind Tech-ManufacturingTec

Course Number:

1110

Title:

Manufacturing Skills II

Catalog Description:

Provides skills in layout techniques and operations, including bolt hole circles, location of surfaces related by non-right angle triangles, and points of tangency. Includes layout drawing by sketching proper views from actual part.

Credit Hour(s):

2

Lecture Hour(s):

2

Requisites

Prerequisite and Corequisite

ATMT-1100 Manufacturing Skills I or concurrent enrollment; or departmental approval: Admissions to Manufacturing Technology apprenticeship program

Outcomes

Course Outcome(s):

N/A

Objective(s):

1. Translate basic dimensions of a part through the use of calculators and measuring tools.
2. Explain what factors determine the selection and arrangement of a drawing.
3. Combine information gathered in each view and conceptualize the shape, features and size of the part.
4. Identify, calculate, construct and name each view of a drawing with the work piece positioned horizontally or vertically.
5. Read, construct, and calculate a two and three view drawing for complete information about the shape.
6. Describe fasteners and the proper use for each in Mold and Die construction.
7. Describe the application of drafting conversions from fractions to decimals form.
8. Describe construction of lines and plains using drafting equipment and calculators.
9. List systems for controlling graphic communication.
10. Recognize a weldment print and its basic symbols.

Methods of Evaluation:

1. Quizzes
2. Exams
3. Classroom participation

Course Content Outline:

1. Basic dimensions using calculators and measuring tools
 - a. Engineering print translation
 - b. Tool makers steel scale
 - c. Engineers scale (relationship of scale size)
2. Selection and arrangement of a drawing
 - a. Proper paper size selection
 - b. Centering a 3 view drawing
 - c. Title blocks
 - d. Material lists
 - e. Borders
3. Three view concepts
 - a. Multiview
 - b. Working drawings
 - c. Dimensioning
 - d. Pictorial drawings
 - e. Descriptive geometry
4. Two view drawings
 - a. Bolt hole patterns
 - b. Link plates
 - c. Gasket drawings
 - d. Adjusting rings
 - e. Couplers
 - f. Trammels
5. Fasteners and inserts for molds, fixtures and die"s
 - a. Stripper bolts
 - b. Screws types
 - c. Guide posts
 - d. Bushings
 - e. Core pins
 - f. Ejector pins
 - g. Pullers
6. Conversions of fractions to decimals form and metric conversion
 - a. Fraction to decimal equivalent
 - b. Conversion charts
 - c. Letter and number drill sizes
7. Construction of lines and plains
 - a. T-squares
 - b. Triangles (30/60/90, 45 degree)
 - c. Pythagorean theorem to graphically construct a plane
 - d. Hexagons and polygons
 - e. Calculator methods
8. Graphic communication
 - a. Organizing
 - b. Team concept
 - c. Drafting procedures
 - d. Drafting standards
 - e. Control of a drawing
 - f. Progress reports
 - g. Basic sheet size
 - h. Checking report
 - i. Reproduction of a print
 - j. Photo drafting
 - k. Pin-bar drafting (overlay systems)
9. Weldment prints and symbols
 - a. Resistance welding
 - b. Thermit welding
 - c. Gas and shield

- d. Joints and symbols
- e. Types of welds
- f. Supplementary symbols
- g. Weldment and casting section drawings

The Course Schedule is subject to change due to pedagogical needs, instructor discretion, parts of term, and unexpected events.

Resources for the Instructor

French, Svensen, et al. *Mechanical Drawing*. 10th ed. New York: McGraw Hill, 1994.

Hardman, William. *Basic Machine Shop Theory*. Washington: NTMA Textbook Series, 1982.

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

Taylor, David. *Blueprint Reading for Machinists*. 5th ed. Albany, New York: Delmar, 1992.

Taylor, David. *Machine Trades Blueprint Reading*. Albany, New York: Delmar, 1985.

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

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