ATMT-1600: INTRODUCTION TO CAD

Cuyahoga Community College

Viewing: ATMT-1600 : Introduction to CAD

Board of Trustees:

September 2025

Academic Term:

Fall 2025

Subject Code

ATMT - Appd Ind Tech-ManufacturingTec

Course Number:

1600

Title:

Introduction to CAD

Catalog Description:

Introduction to computer systems and computer-aided drafting (CAD) software as tools used to produce engineering drawings. Keyboarding and computer operating skills are overlaid with software commands. Command topics include line coordinate systems, circles and arcs, geometry creation, text styles, editing geometry and text, controlling drawing display, drawing aids, layers, blocks, hatching, and dimensioning.

Credit Hour(s):

2

Lecture Hour(s):

1

Lab Hour(s):

2

Requisites

Prerequisite and Corequisite

ATMT-1300 Manufacturing Procedures or concurrent enrollment, and departmental approval: Admissions to Manufacturing Technology apprenticeship program.

Outcomes

Course Outcome(s):

N/A

Objective(s):

1. Explain and list the applications of AutoCAD as related to technical drawing.
2. Identify the major components of the CAD workstation.
3. Communicate with other CAD operators, using the terms and definitions applicable to CAD.
4. Explain and list three operating systems needed to power up the computer, handle files, and implement the CAD program.
5. Enter the necessary commands to implement instructions using a variety of input devices.
6. Demonstrate how to save, open, plot, and begin a new drawing file.
7. Draw lines, arcs, circles, polygons and text plus understand the particular options under each command.
8. Implement edit commands to properly modify existing objects.
9. Select and utilize the proper units, paper size, and scale for a drawing.
10. Demonstrate the use of layers and judiciously implement them in a drawing.
11. Use the hatch command.
12. Demonstrate how to develop, store, and use a block.
13. Dimension a drawing following proper standards and practices with the application of dimensioning variables and various dimensioning options and edits.

Methods of Evaluation:

1. Laboratory drawing assignments
2. Quizzes
3. Exams
4. Classroom participation

Course Content Outline:

1. Computer systems
   a. Workstations
   b. Networking
2. Computer operations
   a. Keyboard
   b. Mouse/digitizer
   c. Screen icons
   d. File management
3. Draw commands
   a. Line
   b. Circle
   c. Arc
   d. Point
   e. Text
   f. Geometry shapes
   g. Polylines
4. File management
   a. New drawing file
   b. Open existing drawing file
   c. Quit program
   d. Save drawing file
5. Creating text
   a. Text style
   b. Text edit
6. Editing commands
   a. Erase
   b. Move
   c. Copy
   d. Scale
   e. Rotate
   f. Trim
   g. Extend
   h. Lengthen
   i. Break
   j. Offset
   k. Fillet / Chamfer
   l. Array
7. Drawing aids
   a. Limits
   b. Units
   c. Grid / snap
   d. Object snap
   e. Layers
8. Control drawing display
   a. Redraw
   b. Zoom
   c. Pan
9. Blocks

   a. Concept
   b. Formation
   c. Inserting
10. Hatching
   a. Boundary hatch
   b. Advanced options
11. Basic dimensioning
   a. Fundamental terms
   b. Dimension style
   c. Dimension types
   d. Dimension variables
   e. Center marks
   f. Leaders
   g. Dimension editing

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

Resources for the Instructor

Leach, J. *AutoCAD Instructor 14.* Irwin Publishers, 1998.

Stellman, T. and G. Krishnan. *Harnessing AutoCAD R14.* Autodesk Press, 1998.

Tickoo, S. *AutoCAD: A Problem-Solving Approach R14.* Autodesk Press, 1998.

Top of page
Key: 496