

SOUTHEAST COMMUNITY COLLEGE
CONSTRUCTION MANUFACTURING AND TECHNOLOGY DIVISION
Manufacturing Engineering Technology Program
Date: August 2024

I. CATALOG DESCRIPTION

Course Number: MFGT1350
Course Title: AutoCAD for Manufacturing
Prerequisite(s): None
Catalog Description: Fundamentals of the proper use of the AutoCAD software using current American Society of Mechanical Engineers (ASME) standards; AutoCAD menus, AutoCAD settings and drawing setup, draw and edit commands, AutoCAD coordinate system, practice drawings, symbols, prototype drawings and plotting. Students will learn to use the AutoCAD software to explore, document and validate their designs before they are built.
Credit Hours: 2
Class Hours: 15
Lab Hours: 45
Total Contact Hours: 60

II. COURSE OBJECTIVES: *Course will*

- A. Introduce how to draw a set of working drawings with the use of Computer Aided Drafting Software.
- B. Demonstrate the basic commands and tools necessary for professional 2D drawing and design.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

- A. Student Learning Outcomes: *Student will be able to*
 - 1. Become familiar with the applications, development and terminology associated with CAD.
 - 2. Execute basic draw commands, editing, dimensioning and modify commands, and be familiar with construction and inquiry commands.
 - 3. Start new drawings, work with layers, symbols, blocks, and be familiar with setup of plotter and plotting drawings.
 - 4. Collect information from the drawing and make mathematical calculations.
- B. General Education Learning Outcomes (GELOs)
 - 1. GELO #5: Analytical, Quantitative, and Scientific Reasoning
Outcome 4: Manipulate formulas, data sets, graphs, tables, etc. in a way to produce meaningful outcome.

IV. CONTENT/TOPICAL OUTLINE (*course outline may provide more detailed information*)

- A. CAD overview
- B. Hardware and software
- C. Operating system
- D. AutoCAD menu structure
- E. Basic draw commands
- F. Dimensioning & text
- G. Construction commands
- H. Modifying and edit commands

- I. Section views and hatching
- J. New and prototype drawings
- K. Symbols, blocks and wblocks
- L. Attributes
- M. Plotting and printing
- N. File extensions and management
- O. Geometric, dimensioning and tolerancing

V. INSTRUCTIONAL MATERIALS

- A. Required Text(s): Shumaker, *AutoCAD and Its Applications -Basics*, (current edition – see instructor)
- B. Other Resources:
 - 1. Supplemental handouts supplied by instructor
 - 2. USB 2.0 flash card of equivalent storage (512 Mb suggested)

VI. METHODS OF PRESENTATION/INSTRUCTION

- A. Methods of presentation typically include a combination of the following:
 - 1. Lecture
 - 2. Small and large Group discussion
 - 3. Video presentation
 - 4. Demonstrations
 - 5. Flip charts
 - 6. Handouts
 - 7. Observations
 - 8. Assigned lab projects
 - 9. Field trips

VII. METHODS OF EVALUATION (*course outline will provide more detailed information*)

- A. Methods of evaluation, although determined by the individual instructor, traditionally includes a combination of the following:
 - 1. Notebook (if required)
 - 2. Quizzes
 - 3. Tests
 - 4. Lab grades
 - 5. Class conduct

VIII. SPECIFIC COURSE REQUIREMENTS:

- A. Completion of all tests, projects, assignments, and notebook (if required).
- B. Must earn a final grade of 70% (2.0) or higher.