

SOUTHEAST COMMUNITY COLLEGE
CONSTRUCTION MANUFACTURING AND TECHNOLOGY DIVISION
Manufacturing Engineering Technology Program
Revision Date: August 21, 2023

I. CATALOG DESCRIPTION

Course Number: MFGT1150
Course Title: Engineering Drawing & Design
Prerequisite(s): None
Catalog Description: Basic engineering documentation. Geometric construction, orthographic projection, dimensioning, section views, auxiliary views, pictorial views, precision dimensioning, gears, cams, sheet metal layout, threads, weld symbols, assemblies and a team approach to product design.
Credit Hours: 2
Class Hours: 15
Lab Hours: 45
Total Contact Hours: 60

II. COURSE OBJECTIVES: *Course will:*

- A. Demonstrate and practice the techniques and industry standards to ensure quality engineering documentation.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

- A. Student Learning Outcomes: *Student will be able to:*
 - 1. Produce necessary views of a drawing in orthographic projection and properly dimension a drawing.
 - 2. Apply theory and rules of geometric dimensioning and tolerancing to ASME Y14.5 – 2018 standards.
 - 3. Complete a working set of drawings.
- B. General Education Learning Outcomes (GELOs)
 - 1. GELO #3: Critical Thinking & Problem Solving
Outcome 2: Synthesize information to arrive at reasoned solutions to problems.

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

- A. Print Reading for Industry
- B. Line Conventions
- C. Title Blocks and Parts Lists
- D. Geometric Terms and Construction
- E. Multiview Drawings
- F. Section Views
- G. Auxiliary Views
- H. Screw Thread Representation
- I. Dimensioning
- J. Tolerancing
- K. Machining Specifications and Drawing Notes
- L. Geometric Dimensioning and Tolerancing
- M. Drawing Revision System
- N. Detail and Assembly Drawings
- O. Springs and Fasteners
- P. Gears and Splines
- Q. Cam Diagrams

- R. Plastic Parts
- S. Precision Sheet Metal Parts
- T. Welding Prints
- U. Instrumentation and Control Drawings
- V. Measurement Tools
- W. Sketching Pictorial Drawings

V. INSTRUCTIONAL MATERIALS

- A. Required Text(s): *Print Reading for Industry*, Brown & Brown, (Refer to CID and/or instructor for current edition)

VI. METHODS OF PRESENTATION/INSTRUCTION

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

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

- A. Methods of evaluation, although determined by the individual instructor, traditionally includes a combination of the following:
 - 1. Workbook Assignments
 - 2. Quizzes
 - 3. Tests
 - 4. Lab grades

VIII. SPECIFIC COURSE REQUIREMENTS:

- A. Completion of all Workbook Assignments, Quizzes, Tests, and Labs.
- B. Must earn a final grade of 70% (2.0) or higher.
- C. Program shop safety rules will be followed. Please see the course outline for any additional safety rules established by the instructor.