

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

I. CATALOG DESCRIPTION

Course Number: MFGT2559
Course Title: Geometric Dimensioning & Tolerancing
Prerequisite(s): MFGT1150
Catalog Description: Study and application of current methods, symbols, and principles of geometric dimensioning and tolerancing as per ASME 14.5-2018.
Credit Hours: 2
Class Hours: 23
Lab Hours: 23
Total Contact Hours: 46

II. COURSE OBJECTIVES: *Course will:*

- A. Explain the purpose of geometric tolerancing.
- B. Demonstrate application of current methods, symbols, and principles of geometric dimensioning and tolerancing as per ASME 14.5-2018.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

- A. Student Learning Outcomes: *Student will be able to:*
 - 1. Identify the applications of current methods.
 - 2. Define terms, apply geometric dimensioning and tolerancing to drawings and work to current standards.
- B. General Education Learning Outcomes (GELOs)
 - 1. GELO #3: Critical Thinking & Problem Solving
Outcome 1: Collect, identify, interpret and analyze data.

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

- A. Symbols & terms
- B. Geometric system
- C. Position tolerance
- D. Limits of size
- E. Profile tolerances
- F. Datum reference frame
- G. Datum modifiers
- H. Form tolerances
- I. Orientation tolerances
- J. Position tolerances
- K. Coaxial & non-cylindrical controls
- L. Fastener formulas
- M. Inner & outer boundary stack-up calculations

V. INSTRUCTIONAL MATERIALS

- A. Required Text(s):
 - 1. Neumann, *GeoTol Pro Fundamentals Workbook* (Refer to CID and/or instructor for current edition)
- B. Other Resources:
 - 1. Supplemental handouts supplied by instructor

2. *Machinery's Handbook* (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. Lecture
 2. Small and large group discussion
 3. Video presentation
 4. Handouts
 5. Observations
 6. Assigned lab projects
 7. 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

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.
- C. Program shop safety rules will be followed. Please see the course outline for any additional safety rules established by the instructor.