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

I. CATALOG DESCRIPTION

Course Number:	MFGT1421
Course Title:	Manufacturing Processes I
Prerequisite(s):	None
Corequisite(s):	MACH1456
Catalog Description:	The theory and safe operation of machine and hand tools. Covers metrology, five basic machining techniques (drilling, turning, boring, milling, and grinding), tool geometry, speeds, feeds, and cutting fluids.
Credit Hours:	2
Class Hours:	30
Lab Hours:	0
Total Contact Hours:	30

II. COURSE OBJECTIVES: *Course will:*

A. Introduce the safe operation of precision measurement tools, hand tools, and machine tools.

B. Review metrology, the five basic machining techniques (drilling, turning, boring, milling, and grinding), tool geometry, tool speeds, tool feeds, and the use of cutting fluids.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

A. Student Learning Outcomes: *Student will be able to:*

1. Examine the different types of machine shops and the different career paths that are available.

2. Examine the need for and the importance of safety.

3. Distinguish the different types of precision tools, hand tools, and machine tools.

4. Show linear and angular measurements.

5. Explain gears, gearing, screw threads, and taper and angular cutting.

6. Explain non-traditional machining processes.

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. Safety
B. Metrology
C. Threads
D. Cutoff and contour sawing
E. Tool angles and grinding
F. Drilling processes
G. Turning and boring processes
H. Milling processes
I. Gears and gearing
J. Nontraditional machining

V. INSTRUCTIONAL MATERIALS

A. Required Text(s):

1. Hopewell, Eric & Hoffman, Peter; *Precision Machining Technology* (Refer to the CID or instructor for current edition)

B. Other Resources:
1. Homework assignment handouts provided by instructor
2. Safety glasses

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. Handouts
6. Observations
7. Assigned lab projects
8. 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

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.**