

SOUTHEAST COMMUNITY COLLEGE
CONSTRUCTION MANUFACTURING AND TECHNOLOGY DIVISION
Precision Machining & Automation Technology Program
Revision Date: August 26, 2019

I. CATALOG DESCRIPTION

Course Number: MACH1223
Course Title: Machine Tool Lab III
Prerequisite(s): MACH1174
Catalog Description: Practice using Machine Tools. Drill press, lathe, milling machine, surface grinder and cylindrical grinder.
Credit Hours: 2.0
Class Hours: 8
Lab Hours: 68
Total Contact Hours: 76

II. COURSE OBJECTIVES: *Course will:*

- A. Develop proficiency on such machine tools as the drill press, lathe, milling machine, surface grinder and cylindrical grinder.
- B. Apply the classroom theory to help solve routine problems on daily lab projects.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

- A. Student Learning Outcomes: *Student will be able to:*
 - 1. Calculate proper speeds and feeds for all machining operations.
 - 2. Single point thread internal and external UN and Acme threads using lathe.
 - 3. Grind boring and threading tolls to machine assigned projects.
 - 4. Set-up lathes to machine components between centers.
 - 5. Produce angles and tapes using both compound rest and tailstock set over.
 - 6. Set-up and operate the tracer lathe.
 - 7. Indicate a four jaw chuck on a lathe.
 - 8. Drill, ream, bore, tap, counterbore and countersink on a lathe.
 - 9. Precisely bore and position holes using a boring head and digital readout on vertical mill.
 - 10. End mill keyseats on shafts and broach keyseats in a bore.
 - 11. Position drilled holes and counterbore or countersink to proper depths.
 - 12. Operate surface grinder using magnetic checks and magnetic parallels.
 - 13. Set-up and grind straight and tapered diameters on cylindrical grinder.
- B. General Education Learning Outcomes (GELOs)
 - 1. GELO 5: Analytical, Quantitative, and Scientific Reasoning
Outcome 1: Apply mathematical and scientific methods to solve problems from an array of contexts and everyday situations.

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

- A. See course outline for detailed unit of instruction.

V. INSTRUCTIONAL MATERIALS

- A. The course outline lists the current text(s) required for this class. The list is also available in the campus bookstore. The course outline also lists the tools/equipment or other supplies required for this class.

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. Transparencies
 - 5. Demonstrations
 - 6. Project boards
 - 7. Flip charts
 - 8. Handouts
 - 9. Observations
 - 10. Assigned lab projects
 - 11. Field trips

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

- A. Methods of evaluations, 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. Attendance/class conduct
 - 6. SCC Standard Grading Scale Policy

VIII. SPECIFIC COURSE REQUIREMENTS

- A. Completion of all tests, projects, assignments, and notebook (if required).
- B. Program shop safety rules will be followed. Please see the course outline for any additional safety rules established by the instructor.