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

I. CATALOG DESCRIPTION

Course Number:	MACH1131
Course Title:	Manufacturing Processes for Electromechanical
Prerequisite(s):	None
Catalog Description:	The basic operation of the lathe, milling machine, and grinder are explored as they relate to maintenance technicians. The laboratory experience will include metrology, use of basic hand tools, metal sawing, drilling, and tapping, milling, turning, threading, and grinding.
Credit Hours:	3.0
Class Hours:	15
Lab Hours:	90
Total Contact Hours:	105

II. COURSE OBJECTIVES: *Course will:*

A. Demonstrate the basic operation of the lathe, milling machine, and grinder is covered as they relate to maintenance technicians. The laboratory experience will include metrology, use of basic hand tools, metal sawing, drilling, and tapping, milling, turning, threading, and grinding.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

A. Student Learning Outcomes: *Student will be able to:*
- **1.** Become familiar with the five basic machine tools: lathe, milling machine, grinder, drill press, and saws.
- **2.** Read blue prints and use the information from the blueprints to lay out their work pieces.
- **3.** Operate the tolls in the machine shop in a safe manner.
- **4.** Become familiar with the terminology of the precision measurement tools, layout tools, hand tools, and machine tools used in the machining trades.

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. Safety
B. Precision measuring tools
C. Layout tools
D. Hand tools
E. Tool grinding
F. Drilling operations
G. Lathe Operations
H. Milling Operations
I. Grinding Operations

V. INSTRUCTIONAL MATERIALS

A. Required Text(s): None
B. Other Resources:
- **1.** Supplemental handouts supplied by the instructor
- **2.** Safety glasses provided by the student
- **3.** Writing material & supplies provided by the student

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

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.** Homework
- **2.** Quizzes
- **3.** Tests
- **4.** Lab grades
- **5.** Attendance/class conduct

VIII. SPECIFIC COURSE REQUIREMENTS

A. Completion of all tests, quizzes, projects and assignments.
B. Must earn a final grade of 60% or higher.
C. Program shop safety rules will be followed. Please see the course outline for any additional safety rules established by the instructor.