SOUTHEAST COMMUNITY COLLEGE
CONSTRUCTION MANUFACTURING AND TECHNOLOGY DIVISION
Precision Machining & Automation Technology Program
Revision Date: August 23, 2021
Syllabus Statements

I. CATALOG DESCRIPTION

Course Number:	MACH1156
Course Title:	Blueprint Reading & Drawing
Prerequisite(s):	None
Catalog Description:	Basic theory in blueprint reading, drafting, equipment utilization, lettering, and geometric constructions. Shape and size description, section views and freehand sketching.
Credit Hours:	2.0
Class Hours:	23
Lab Hours:	23
Total Contact Hours:	46

II. COURSE OBJECTIVES: *Course will:*

A. Describe the different line styles and weights that are used on a drawing.
B. Show how to properly represent a part in its orthographic projection.
C. Demonstrate how to dimension a part properly.
D. Explain how to properly tolerance a part.
E. Examine the use of a title block, list of materials, and notes on a drawing.
F. Illustrate the use of section views to clarify sections of a part on a drawing.
G. Discuss the identification of different thread representations.
H. Identify the use of callouts for various machining processes.
I. Define the basics of GD&T and how it is used on a drawing.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

A. Student Learning Outcomes: *Student will be able to:*
  1. Distinguish the uses and meanings of the different line styles and weights that are used on a drawing.
  2. Properly represent a part using orthographic projection.
  3. Sketch a 3D part from the orthographic projection on a drawing.
  4. Sketch the section view as described by the cutting plane line on a drawing.
  5. Read and interpret the notes found on mechanical prints.
  6. Interpret the size of the features of a part from the dimensions and tolerances given on a drawing.
  7. Find drawing information from the title block of a drawing.
  8. Identify special manufacturing specifications from the notes and callouts on a drawing.
  9. Find the proper material and location of a part from the list of materials on an assembly drawing.
  10. Identify different thread representations given on a drawing.
  11. Identify the basic symbols used with GD&T.
  12. Interpret the meaning of the basic GD&T block.

B. General Education Learning Outcomes (GELOs)
  1. GELO 2: Written Communication

Outcome 3: Identify and evaluate evidence from a variety of printed, visual, and electronic sources.

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

A. Unit I
- **1.** Overview/terms
- **2.** Visualizing shapes
- **3.** Line usage
- **4.** Title blocks

B. Unit II
- **1.** Applied Math
- **2.** Dimensioning
- **3.** Geometric dimensioning & tolerance
- **4.** Contours
- **5.** Holes

C. Unit III
- **1.** Angles
- **2.** Threads
- **3.** Machining Details
- **4.** Section Views
- **5.** Auxiliary Views
- **6.** Assembly Drawings

V. INSTRUCTIONAL MATERIALS

A. Required Text(s):Barsamian, Michael, A., and Gizelback, Richard, A., *Machine Trades Print Reading*, ISBN: 978-1-61960-195-6

B. Other Resources:
- **1.** Notebook
- **2.** Calculator
- **3.** 6” Steel Rule
- **4.** Pencil

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.** On-line aids
- **5.** Demonstrations
- **6.** Handouts
- **7.** Observations
- **8.** Assigned lab projects
- **9.** 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.** Workbook
- **2.** Quizzes
- **3.** Tests
- **4.** Participation/class conduct

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.