

SOUTHEAST COMMUNITY COLLEGE
CONSTRUCTION MANUFACTURING AND TECHNOLOGY DIVISION
Precision Machining & Automation Technology Program
Revision Date: August 2025

I. CATALOG DESCRIPTION

Course Number: MACH2547
Course Title: Die Theory
Prerequisite(s) or
Corequisite(s): MACH1428, MACH1455
Catalog Description: Study of the design and construction of shearing, blanking, piercing, cutoff, bending, and forming. Punch presses and die sets.
Credit Hours: 2.0
Class Hours: 23
Lab Hours: 23
Total Contact Hours: 46

II. COURSE OBJECTIVES: *Course will:*

- A. Identify the processes encountered in metal stamping dies.
- B. Explore the various components used in metal stamping dies.
- C. Explore the various types of die sets and punch presses.
- D. Familiarize the student with the vocabulary of stamping die components.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

- A. Student Learning Outcomes: *Student will be able to:*
 - 1. Describe the appearance of a stamped metal piece part.
 - 2. Distinguish and size the Die components to create a stamped metal piece part.
 - 3. Determine the punch press tonnage to stamp a piece part.
 - 4. Determine the purchased components used in a die.
- B. General Education Learning Outcomes (GELOs)
 - 1. GELO 5: Analytical, Quantitative, and Scientific Reasoning
Outcome 4: Manipulate formulas, data sets, graphs, tables, etc. in a way to produce a meaningful outcome.

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

- A. The student will learn the appearance of stamped metal piece part by examples shown in class.
- B. Students will learning how to size the components to create a stamped metal piece part, and determine the punch press tonnage to stamp a piece part by doing mathematical calculations.
- C. Determine the purchased components used in a die, and they types of Die sets, by exploring the various Die component catalogs.
- D. The student will study and learn the processes encountered in metal stamping dies, by means of lecture, homework, and example.

V. INSTRUCTIONAL MATERIALS

- A. Required Text(s): Boljanovic and Paquin, *Die Design Fundamentals*, ISBN: 0-8311-3119-5
- B. Other Resources:
 - 1. Supplemental handouts
 - 2. Notebook for taking notes

3. Calculator

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. Project boards
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. Homework
2. Tests
3. 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.