**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: | MACH1225 |
| Course Title: | Materials of Industry |
| Prerequisite(s): | None |
| Catalog Description: | Introduction to materials (steel, irons, etc.) used in industry. Properties, uses, specifications, availability, tools steels and heat treatment. |
| Credit Hours: | 2.0 |
| Class Hours: | 23 |
| Lab Hours: | 23 |
| Total Contact Hours: | 46 |

## II. COURSE OBJECTIVES: *Course will:*

**A.** Determine how to select and apply the proper material for specific applications.
**B.** Identify various material properties and their importance.

## III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

**A.** Student Learning Outcomes: *Student will be able to:*
  **1.** Identify most common materials used in industry.
  **2.** Identify standard metal specifications, their properties and typical applications.
**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.** Unit 1: Iron and Steel Production
**B.** Unit 2: Properties of Materials
**C.** Unit 3: Carbon Steels
**D.** Unit 4: Alloy, Specialty & Stainless Steel
**E.** Unit 5: Tool Steels
**F.** Unit 6: Thermal Processing
**G.** Unit 7: Cast Irons and Casting Processes
**H.** Unit 8: Nonferrous Metals
**I.** Unit 9: Engineered Polymers

## V. INSTRUCTIONAL MATERIALS

**A.** Required Text(s): This course will be taught using handouts and internet resources.
**B.** Supplies: 3 Ring Notebook and 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. Notebook (if required)
2. Quizzes
3. Tests
4. Lab grades
5. Class participation

## 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.