SOUTHEAST COMMUNITY COLLEGE
CONSTRUCTION MANUFACTURING AND TECHNOLOGY DIVISION
Manufacturing Engineering Technology Program
Revision Date: August 23, 2021
Syllabus Statements

I. CATALOG DESCRIPTION

Course Number:	MFGT1125
Course Title:	Materials of Industry
Prerequisite(s):	None
Catalog Description:	Introduction to materials (steels, irons, etc.) used in industry. Properties, uses, specifications, availability, heat treatment and tool steel.
Credit Hours:	2
Class Hours:	15
Lab Hours:	45
Total Contact Hours:	60

II. COURSE OBJECTIVES: *Course will:*

A. Introduce proper material selection and applications.
B. Identify properties of the materials.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

A. Student Learning Outcomes: *Student will be able to:*
  1. Identify standard metal specifications, their properties and typical applications.
  2. Identify and recommend the most common materials used in industry.
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. Iron and steel making
B. Properties and selection of engineering materials
C. Carbon steels
D. Alloy and specialty steels
E. Tool steel types and selection
F. Thermal processing (heat treatment)
G. Cast irons and casting processes
H. Nonferrous metals
I. Polymers
J. Resource paper

V. INSTRUCTIONAL MATERIALS

A. Required Text(s): Brandt, Warner, *Metallurgy Fundamentals,* Sixth Edition, ISBN 1635638747
B. Other Resources:
  1. Supplemental handouts from instructor
  2. Scientific calculator
  3. Three-ring notebook

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.** Handouts
- **5.** Observations
- **6.** Assigned projects
- **7.** Field trips

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

A. Methods of evaluation, although determined by the individual instructor, traditionally includes a combination of the following:
- **1.** Notebook (if required)
- **2.** Quizzes
- **3.** Tests
- **4.** Lab grades

VIII. SPECIFIC COURSE REQUIREMENTS:

A. Completion of all tests, projects, assignments, and notebook (if required).

B. Must earn a final grade of 60% (1.0) or higher.

C. Program shop safety rules will be followed. **Please see the course outline for any additional safety rules established by the instructor.**