



South Central College

CMAE 1512 Introduction to Manufacturing

Common Course Outline

Course Information

Description *Explore the exciting world of Manufacturing and begin your training for a great career! This course provides an overview of different fields within Manufacturing and the opportunity for students to learn basic skills in a variety of high-demand fields, including Carpentry, Machining, Mechatronics, and Welding. In addition to the hands-on activities that will be completed throughout the course, students will also have the opportunity to earn a Precision Measuring credential.*

Total Credits 2

Total Hours 64

Types of Instruction

Instruction Type	Credits/Hours
Lab	2/64

Pre/Corequisites

None

Institutional Core Competencies

Critical and Creative Thinking - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

Course Outcomes

1. Identify Various Manufacturing Careers and Skill Sets

Learning Objectives

Explore career options within Manufacturing

Discuss educational options to pursue and complete educational training within Manufacturing

Identify regional Manufacturing employers and job qualifications

2. Explore Basic Machining Operations

Learning Objectives

Identify Control System on CNC Mill

Explain Offsets for CNC axis.
Describe Coordinate Systems Cartesian.

3. Explore Basic Welding Techniques and Safety

Learning Objectives

Demonstrate safety specific to oxy-fuel welding procedures.
Perform manual and machine cutting using various welding equipment.
Prepare welding equipment to accomplish given tasks.
Utilize knowledge of rod manipulation in SMAW.
Demonstrate single pass and multiple pass welding techniques.
Identify proper equipment for performing GMAW.
Practice a variety of GMAW weldments.

4. Describe Mechatronics and Skills Related to Automated Manufacturing Systems

Learning Objectives

Exhibit an ability to interpret mechanical prints.
Explain Geometric Dimensioning and Tolerancing
Interpret prints that use Geometric Dimensioning and Tolerancing.

5. Explore Basic Carpentry Techniques

Learning Objectives

Interpret floor plans for a project.
Utilize basic hand tools.
Demonstrate tool care and handling.
Demonstrate ability to operate stationary power tools.

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