

Course Code: MFT 130

Course Title: Basic Machine Processes

Department: Applied Sciences and Technologies

Effective Date: Summer 2026

PCS Code: 1.2 - Occupational/Technical Instruction

CIP Code: 48.0503

Repeatability: 0

Credit Hours

Catalog Notation: 2-2-3

Credit Hour Distribution:

Lecture: 2

Lab: 2

Clinical: 0

Total: 3

General Course Information

Catalog Description

General machining procedures including basic operations of lathe and mill. Basic bench work operations including layout and hand tools. Basic machine tool projects using cross section of machine tool equipment.

General Course Objectives

Students will be able to measure with a variety of measuring equipment, select the proper material and tooling, and safely perform basic machining operations on the lathe, vertical milling machine, and related tooling.

Minimum Placement Levels

English	Reading	Math
Placement into ENG 098	Placement into CCS 098	Placement into MAT 060

Prerequisites

None

Methods of Evaluation

Students will be given 2 one-hour exams, 4 quizzes, 3 lab projects, and 1 final exam.

Instructional Materials and Additional Supplies

Machine Tool Practices, by Kibbe, Neely, Meyer, and White. Prentice-Hall. Current Version.

Course Content

General Learning Outcomes (GLOs)

- Creativity and Innovative Thinking: Students will design, present, and interpret materials, information, and ideas in innovative ways.
- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.
- Technology: Students will demonstrate the ability to evaluate, select, and appropriately use current and emerging tools.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Course Introduction	1. State the course objectives and grading system by reading the course sheet and asking the instructor for explanations.	1	0	0
Safety	1. Demonstrate proper safety procedures while operating in a machine processes area.	2	2	0
Material and Tool Selection	1. Select the correct material for a given task. 2. Form and sharpen tools as required.	4	2	0
Measurement	1. Use a variety of precision measuring devices including calipers and micrometers. 2. Make measurements in English or metric. 3. Convert metric measurements to English and vice versa.	6	2	0
Fixtures	1. Use basic fixtures for cutting, drilling, etc.	3	7	0
Basic Machine Tool Operations	1. Chuck, true, and perform a variety of cutting, drilling, boring, and reaming operations on the metal lathe and vertical milling machine. 2. Machine projects within .002.	14	17	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
30	30	0