Course Information Form (CIF)

Course Code: MFT 113

Course Title: Introduction to Hydraulics and Pneumatics

Department: Applied Sciences and Technologies
PCS Code: 1.2 - Occupational/Technical Instruction
CIP Code: 47.0303
Repeatability: 0

Effective Date: Summer 2026

Credit Hours

Catalog Notation: 2-2-3
Credit Hour Distribution:

Lecture: 2	Lab: 2	Clinical: 0	**Total: 3**

General Course Information

Catalog Description

Introduction to theory and applications of fluid and pneumatic power transfer and control.

General Course Objectives

Students will learn the theory and application of hydraulic and pneumatic systems.

Minimum Placement Levels

English	Reading	Math
Placement into ENG 098	Placement into CCS 098	Placement into MAT 059

Prerequisites

None

Methods of Evaluation

The minimum evaluation methods will include 16 circuit completion exercises and 4 objective exams (including 1 final).

Instructional Materials and Additional Supplies

Lab Volt Pneumatics (workbook)
Lab Volt Hydraulics (workbook)

Course Content

General Learning Outcomes (GLOs)

- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Properties of Liquids and Gases	1. List the properties of fluids.	1	4	0
Pressure, Level, and Manometry	1. State the relationship of pressure and level as they relate to liquids and gases.	2	5	0
Static Forces	1. Identify the static forces that influence the design of fluid systems.	3	6	0
Flow	1. Describe the methods of fluid transfer, storage, and energy change.	6	5	0
System Components	1. Recognize the pumps, fans, valves, and motors that comprise a typical system.	9	5	0
System Design	1. Summarize how to apply theory to the practical design of subsystems and systems.	9	5	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
30	30	0