

# ARC WELDING LEC/LAB (PMTC)

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## **PMTC 0111 Oxygen/Fuel Gas Processes**

**Clock Hours:** 45

**Lab Fee:** Yes

This course provides basic orientation for shop and construction site safety. Instruction includes oxyacetylene welding and cutting processes, safety and proper handling of compressed gas cylinders, fluent equipment set-up, operation, and storage. Emphasis is placed on proper adjustment of welding and cutting flames and material preparation. Use of personal protective equipment (PPE) and basics of shop safety are introduced.

## **PMTC 0134 Gas Metal Arc Welding Principles**

**Clock Hours:** 90

**Lab Fee:** Yes

This course introduces terminology and procedures related to Gas Metal Arc Welding (GMAW, "MIG"), including power source configurations, hardware, equipment set-up, and consumable gun components. Students are presented with practical applications related to shielding gas flow, weld bead characteristics, and weld bead geometry needed for certifications in fillet and groove weld fabrication.

## **PMTC 0153 Plasma Arc Cutting**

**Clock Hours:** 30

**Lab Fee:** Yes

This course introduces the student to the process of plasma arc cutting. The student will develop techniques of applying plasma arc cutting skills to nonferrous metals.

## **PMTC 0164 Welding Fabrication Fundamentals and Machine Elements**

**Clock Hours:** 30

**Lab Fee:** Yes

This course introduces general drawing fundamentals, drawing construction, sketching, and drawing view placement, along with fabrication techniques, fabrication set-up, fixtures, jigs, and templates. Fabrication fundamentals including tack and fit-up technique using squares, plumb-bobs, levels, rulers, and machine elements are also introduced.

## **PMTC 1203 Introduction to Machining**

**Credit Hours:** 3

This course presents a practical overview of machine shop practices and equipment. It includes an introduction to blueprint reading, the use of precision measuring tools, and the care and use of basic metal fabrication equipment. Safety and quality practices receive a strong emphasis in this introductory course.

## **PMTC 2213 Advanced Machining 1**

**Credit Hours:** 3

**Prerequisites:** PMTC 1203 with a grade of "C" or higher

This course concentrates on sheet metal fabrication techniques, riveting tools, and the care and use of manual lathes and mills. The course teaches machining theory and concepts and requires the student to safely and competently use manual machining equipment.

## **PMTC 2214 Advanced Machining 2**

**Credit Hours:** 3

**Prerequisites:** PMTC 2213 with a grade of "C" or higher

This course concentrates on the theory and use of computer numeric control (CNC) lathes and vertical milling machines and includes computer numerical programming, linear and polar coordinate systems, machine part programming and tool paths.