

Specification of Competency Standards
for the Manufacturing Technology.
Unit of Competency.

Functional Area - Product Manufacturing

Title	Perform wire EDM and master various machining parameters to improve quality of mould components
Code	106512L3
Range	This unit of competency is applicable to the product manufacturing departments / production departments of companies engaged in the tooling industries. Practitioners should be capable to understand the principles of wire EDM (electrical discharge machining), and are able to perform wire EDM operations to meet precision and quality requirements for mould components
Level	3
Credit	4
Competency	Performance Requirements - Understand relevant knowledge of wire EDM processes - Understand principles, characteristics, and applications of wire EDM - Understand methods of workpiece clamping in wire EDM machines - Understand types, specifications, and applications of standard fixtures - Understand impact of machining fluids (include deionised water and oil) on workpiece quality and EDM performance - Understand material types, wire diameters, properties, and selection criteria of wire electrodes - Understand relationship between machining accuracy, number of steps, and machining time ratios - Understand how different workpiece materials and engineering designs affect machining parameter settings - Understand types, structure, specifications, working principles, and dielectric fluid circulation systems of wire EDM machines, as well as required parameter settings and methods - Understand various machining instructions, program structures, and programming methods used in wire EDM machines - Understand application of automatic programming tools (APT) in wire EDM machine design - Understand the intelligent solutions applicable to wire EDM machines, include data acquisition, data enterprise, and preventive maintenance - Perform wire EDM machining - Able to set appropriate machining parameters according to workpiece materials and engineering design, and create machining programs - Able to set suitable machining parameters and correction values under guidance, based on engineering drawings and specified tolerances - Able to correctly install and align workpieces and cutting wires - Able to operate wire EDM machines to perform wire EDM machining - Able to maintain and troubleshoot wire EDM machines under guidance, include wire breakage issues - Able to process and organise collected wire EDM data, to assess machining quality and equipment performance, and adjust production parameters in real-time to optimise production, according to departmental requirements - Able to retrieve production data from machine PLCs or external sensors - Professional handling of wire EDM

	• Able to follow safety guidelines and relevant regulations for wire EDM operations, and comply with design drawings, specifications, and production efficiency requirements
Assessment Criteria	The integrated outcome requirements of this unit of competency are: • Able to operate wire EDM machines to perform wire EDM operations, and achieve required production quality and efficiency • Able to handle abnormal situations and perform maintenance on wire EDM machines under guidance
Remark	This is the updated version of UoC 106512L4