

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

Functional Area - Product Manufacturing

Title	Perform manual mechanical milling to obtain and analyse various machining data to improve quality of mould components
Code	106408L2
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 knowledge and techniques of various manual machining milling operations and are able to operate general milling machines to perform manual milling on mould components
Level	2
Credit	4
Competency	Performance Requirements - Understand relevant knowledge of manual milling processes - Understand basic operating principles of general milling machine, include starting and stopping the milling machine, changing the spindle speed, selecting the table feed direction and speed, adjusting the height, length and width of the table, adjusting the spindle perpendicularity, and loading, unloading and operating the indexing head, tailstock and chuck, etc - Understand usage and safety precautions of common milling machine fixtures and various pressure plates, include wrenches and accessory clamps - Understand types and applications of commonly used cutting tools - Understand functions of various cutting fluids and their applications in milling, as well as methods for handling metal scrap - Understand operation and use of relevant auxiliary tools, such as rotating plate, indexing head, and indexing lever - Understand relationship between the workpiece and milling conditions, include the interrelationships between finished product design, material type, spindle speed, depth of cut, and table feed rate - Understand common milling machine troubleshooting and maintenance methods - Perform manual mechanical milling - Able to correctly secure, install, and align the workpiece - Able to select appropriate cutting tools and milling conditions according to engineering drawings and material specifications - Able to analyse tool wear and make adjustments and corrections accordingly - Able to operate general milling machines and perform various milling operations such as face milling, side milling, angular milling, step milling, groove milling, angular groove milling, multi-side milling, and parting off - Able to use various measuring tools to conduct initial measurements on the workpiece and make corrections, include dimensions, accuracy, grooves, angles, surface roughness, arcs, and clearances - Able to maintain general milling machines and perform troubleshooting - Professional handling of manual mechanical milling - Able to comply with manual milling requirements (include the handling of metal chips generated during the process), safety guidelines, and relevant procedures, and perform manual machining milling

	operations according to design drawings, specifications, and production efficiency requirements
Assessment Criteria	The integrated outcome requirements of this unit of competency are: • Able to select, apply, and remove appropriate cutting tools according to machining requirements, workpiece material, and engineering drawings • Able to operate general milling machines correctly and safely to perform manual machining milling operations and achieve good production efficiency, product quality, and precision requirements • Able to handle common abnormal conditions of milling machines and perform corrections, adjustments, and maintenance
Remark	This is the updated version of UoC 106408L3