

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

Functional Area - Product Manufacturing

Title	Perform benchwork to improve quality of mould components
Code	106410L2
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 benchwork (hand fitting) operations and are able to use appropriate tools and methods to perform manual machining and finishing on mould components
Level	2
Credit	4
Competency	Performance Requirements - Understand relevant knowledge of benchwork processes - Understand machining characteristics of different workpiece materials - Understand types and usage of scribing tools - Understand types, specifications, functions, and applications of commonly used benchwork fixtures - Understand various benchwork methods and techniques, include sawing, hammering, chiseling, filing, polishing, fitting, drilling, scribing, tapping, and reaming - Understand types, functions, maintenance, and usage of various benchwork tools, include files, scrapers, emery cloth, sandpaper, grinding stones, reamers, etc. - Understand specifications of different saw blades - Understand types and usage of various hand grinders - Understand structure, function, and operation method of band saw machines - Understand international standards for different types of threads - Understand types, specifications, applications of screw taps and screw dies - Understand types and usage of cutting fluids used in manual tapping and threading - Understand processes and classifications of drilling and reaming operations - Perform benchwork - Able to select appropriate scribing tools for layout marking - Able to choose suitable hand hacksaws and band saw machines to cut workpieces according to layout lines - Able to select appropriate files to perform filing operations according to layout shapes, include filing chamfers, shaping contour of the mould, and adjusting mating positions - Able to select suitable scrapers to scrape flat surfaces, internal / external curved surfaces, mating surfaces, and ornamental patterns - Able to grind scrapers to appropriate shape and cutting angle - Able to use suitable emery cloth, sandpaper, or grinding stones for manual polishing and grinding - Able to select appropriate screw taps and screw dies - Able to refer to charts to select suitable tap drills, and manually tap or ream threads according to requirements - Able to select suitable reamers to ream straight holes and tapered holes to the required dimensions and allowance

	3. Professional handling of benchwork • Able to comply with benchwork requirements, safety guidelines, and relevant procedures, and perform benchwork operations on mould components according to design drawings, specifications, and production efficiency requirements
Assessment Criteria	The integrated outcome requirements of this unit of competency are: • Able to apply appropriate benchwork tools according to machining requirements • Able to perform various benchwork operations correctly and safely, achieving good production efficiency, product quality, and precision requirements • Able to maintain various benchwork hand tools to ensure the required machining accuracy and functionality
Remark	This is the updated version of UoC 106410L3