

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

Functional Area - Product Manufacturing

Title	Perform metal extrusion, master various machining parameters, to improve quality of metal extrusion, and solve production problems
Code	106519L3
Range	This unit of competency is applicable to the process design and development departments / engineering departments, and product manufacturing departments / production departments of companies engaged in the metal extrusion industries. Practitioners should be capable to understand equipment setup and various metal extrusion techniques, and are able to perform extrusion processes and resolve production issues to meet quality and efficiency requirements
Level	3
Credit	3
Competency	Performance Requirements - Understand relevant knowledge of equipment adjustment and various metal extrusion processes - Understand types and properties of commonly used extrusion materials, include aluminum alloys, copper alloys, and composite materials - Understand lubrication methods, types, and functions required for different extrusion techniques - Understand classification of extrusion processes, include forward extrusion, backward extrusion, compound extrusion, and radial extrusion - Understand key process parameters and conditions that affect extrusion product quality, such as extrusion speed, friction conditions, billet temperature, and die temperature - Understand operation and setup methods and techniques for metal extrusion equipment - Understand common defects in metal extrusion products, such as surface folding, surface cracking, shrinkage porosity, and cracks - Understand basic structure of metal extrusion dies - Understand types, structures, working principles, specifications, applications, and operation methods of equipment used in metal extrusion processes - Understand intelligent solutions used in metal extrusion processes, include data acquisition, data management, and preventive maintenance - Perform various extrusion processes - Able to correctly identify the specifications and grades of extrusion materials - Able to select and operate appropriate equipment based on product shape, precision, drawings, and process requirements, to perform various types of extrusion operations on different materials - Able to securely fix, load, unload, and align extrusion dies on extrusion presses - Able to make simple adjustments, maintenance, and repairs to extrusion machines - Able to collect and analyse common extrusion quality issues reported by quality control department, and assist in implementing improvements - Able to process and organise collected extrusion data, to evaluate extrusion quality and equipment performance, and adjust production parameters in real-time to optimise production, according to departmental requirements - Professional handling of equipment setup and metal extrusion

	• Able to follow safety guidelines and relevant regulations, and comply with product specifications and production efficiency requirements to perform metal extrusion operations, resolve production problems, and implement continuous improvement
Assessment Criteria	The integrated outcome requirements of this unit of competency are: • Able to adjust equipment and perform various metal extrusion operations according to drawings and process requirements, and resolve production problems • Able to operate metal extrusion equipment independently, and perform basic daily maintenance
Remark	This is the updated version of UoC 106519L4