

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

Functional Area - Product Manufacturing

Title	Implement digitalisation of mould processing equipment and related configurations, and provide real-time visualisation dashboards for production status in mould processing workshops
Code	111578L4
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 utilise appropriate technologies based on the status of mould processing equipment to enable interoperability among various systems, thereby promoting real-time monitoring
Level	4
Credit	6
Competency	Performance Requirements - Understand relevant knowledge of mould processing equipment and configuration digitalisation - Understand basic concepts and technologies of smart manufacturing and Industry 4.0, and be familiar with the operation principles of intelligent processing equipment and systems - Understand process parameters in mould production that affect product quality and efficiency (e.g., dimensional accuracy, positional accuracy, surface finish, etc.), and identify the data to be collected - Understand methods and techniques for collecting production data in mould processing, including sensors, barcodes, and radio frequency identification systems (RFID) - Understand methods and techniques for connecting mould processing equipment and related configurations to a network, as well as the advantages and disadvantages of different technical solutions in the market - Understand logic of data acquisition and system integration - Understand equipment communication protocols and interface standards - Understand application of automation, machine vision, Internet of Things (IoT), big data, and other technologies in intelligent mould processing equipment - Apply digitalisation of intelligent mould processing equipment and related configurations - Able to be familiar with the principles of automation and intelligent technologies in mould processing equipment, including the application of PLC control systems, sensors, actuators, machine vision, IoT, and big data in intelligent mould processing equipment - Able to master data analysis and statistical methods, and utilise data analysis tools and software to analyse and mine equipment data to support and advise decision-making - Able to filter and collect useful data generated in the mould production process, and perform analysis - Able to understand the mechanisms of data exchange and coordination between equipment, enabling visualisation of the usage rate, production efficiency, and fault alerts of mould processing equipment and related configurations - Able to plan the existing systems in the enterprise (including MES, ERP, QMS, WMS, etc.), and integrate them to achieve a single source of data - Able to utilise different technologies (including cloud computing, IoT, big data, etc.) to interconnect workshop equipment and related configurations for mould processing, and to provide centralised real-

	time monitoring status (including capacity, defect rate, and equipment utilisation, etc.) according to the needs of the production department, while optimising production process parameter controls 3. Professional handling of the digitalisation of mould processing equipment and related configurations • Able to perform digitalisation of mould processing equipment and related configurations based on existing information • Able to balance and meet various requirements, including safety, risk, capacity, quality, environmental protection, and cost
Assessment Criteria	The integrated outcome requirements of this unit of competency are: • Able to utilise different technologies (including cloud computing, IoT, big data, etc.) to provide real-time visualisation of the production status in mould processing workshops through the digitalisation of equipment and related configurations • Able to respond to the enterprise's intelligent production needs by conducting preliminary analysis and integration of information to assist in achieving intelligent production
Remark	Individuals who possess the above knowledge and competency are also required to possess the knowledge and competency of “Understand requirements of both physical and electronic drawings, and be familiar with mould manufacturing process to facilitate internal and customer communication regarding moulds and processes (106487L4) ” Individuals who possess the above knowledge and competency are able to support the enterprise to achieve the Industry 4.0 digital maturity level of visualisation (1i)