

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

Functional Area - Process Design and Development

Title	Operate, maintain intelligent and automated mould processing and design equipment, systems and processes, collect and monitor mould process data
Code	111563L3
Range	This unit of competency is applicable to the process design and development departments / engineering departments of companies engaged in the tooling industries. Practitioners should be capable to operate and maintain intelligent and automated mould processing equipment and systems, are familiar with control systems and data handling, and possess knowledge and skills in data collection techniques and process monitoring
Level	3
Credit	3
Competency	Performance Requirements 1. Understand relevant knowledge of equipment, control systems, and digital application technologies in moulding processes • Understand basic concepts and technologies of smart manufacturing and Industry 4.0 • Understand characteristics, processing methods, and forming techniques of commonly used mould materials • Understand design and production processes of moulds, and possess theoretical knowledge related to mould processing • Understand functions, structures, basic operation principles, and system operations of intelligent and automated mould processing equipment • Understand principles of data exchange and collaborative operations among equipment and systems • Understand cost benefits of smart production and in-plant logistics • Understand principles and operation methods of automation equipment, and familiar with application of PLC control systems and sensors • Understand impact of intelligent and automated equipment setup on production capacity, quality, risk, safety, cost, and environmental sustainability • Understand troubleshooting methods for automated equipment • Understand statistical methods for data analysis • Understand principles of network communication protocols and cybersecurity 2. Operate and maintain intelligent and automated mould-making equipment and related digital configurations • Able to operate intelligent and automated mould processing equipment, and understand operating principles and workflow • Able to visualise mould equipment data, such as utilisation rates, production processes, and fault alerts • Able to maintain and service smart and automated equipment on daily basis • Able to identify various equipment malfunctions and implement appropriate corrective actions, include mechanical, electrical, control, and IoT-related troubleshooting • Able to organise production data and evaluate production systems and performance using common data analysis tools, and report to supervisors

	• Able to monitor the status of automated and smart equipment, process data, and in-plant logistics • Able to support the maintenance of equipment and data security in accordance with cybersecurity guidelines • Able to configure and manage network connections for intelligent and automated equipment 3. Professional handling of intelligent mould processing equipment and digital integration analysis • Able to monitor real-time production process parameters using IoT technologies (include cloud computing, IoT, and big data), and report to supervisors • Able to apply automation, machine vision, IoT, and big data technologies in mould processing, integrate into daily equipment operation and maintenance • Able to set up and debug mould processing equipment and related digital configurations under supervision and instructions from senior staff
Assessment Criteria	The integrated outcome requirements of this unit of competency are: • Able to apply basic data analysis and statistical methods to mould manufacturing processes, and present real-time production data, analysis results, and visualisations to supervisors • Able to operate and maintain common intelligent and automated equipment for mould processing, understand their working principles and processes, and optimise and monitor production workflows • Able to support the implementation of smart production initiatives in line with the enterprise's Industry 4.0 requirements and goals
Remark	Individuals who possess the above knowledge and competency are also required to possess the knowledge and competency of “ Understand various requirements of physical and electronic drawings, and be familiar with mould manufacturing processes to effectively communicate with internal staff and customers 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)