

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

Functional Area - Business Intelligence and Information Technology

Title	Introduce and apply Industry 4.0, understand the scope, departments, necessary tools and facilities for implementation, and identify data on visual dashboards for monitoring and initial analysis
Code	111551L4
Range	This unit of competency is applicable to the all companies in the manufacturing technology industry. Practitioners should be capable to grasp the application areas of Industry 4.0 and utilise the innovative application models of Industry 4.0 to support the implementation of digital transformation and smart production in enterprises
Level	4
Credit	5
Competency	Performance Requirements - Understand relevant knowledge of Industry 4.0 application areas, implementation scope, and tools - Understand basic theories and concepts of Industry 4.0, including knowledge of digitalisation, automation, IoT, big data, artificial intelligence, etc. - Understand application scope of Industry 4.0, and be familiar with the various fields within manufacturing (including production, logistics, supply chain management, quality control, etc.), and the technical approaches for data collection in different manufacturing sectors such as plastic products, metal products, and mould manufacturing - Understand internal production processes, technologies, and equipment in enterprises, and be able to comprehend the characteristics and requirements of the manufacturing industry - Understand and be familiar with related technical and engineering knowledge in manufacturing, including automation technology, sensor technology, data collection and analysis technology - Understand knowledge of data analysis and statistical methods - Understand fundamental principles and applications of information technology, including cloud computing, big data, IoT, artificial intelligence, and network security - Understand different Industry 4.0 data analysis tools, including Excel, R, Python, BI, etc. - Establish the scope and technical pathways for implementing Industry 4.0 applications - Able to use data analysis tools and software to perform data analysis and mining, and provide support and guidance for management decision-making - Able to possess project management and teamwork skills, and to organise and manage Industry 4.0 projects, collaborate with cross-departmental teams, and promote smooth project implementation - Able to communicate and coordinate effectively with team members, management, and other relevant personnel to drive the adoption of Industry 4.0 - Able to apply intelligent production and logistics technologies to address issues related to production flexibility and time-bound order fulfillment - Able to align Industry 4.0 with innovative digital business models, and assist in reviewing enterprise strategies for management - Professional handling of the application areas for Industry 4.0 - Able to demonstrate good communication and leadership skills

	• Able to carefully consider factors such as safety, risk, and cost, and ensure the security of enterprise databases to prevent misuse or unauthorised access to enterprise data • Able to prevent any abuse or fraud through the analysis of Industry 4.0 application areas
Assessment Criteria	The integrated outcome requirements of this unit of competency are: • Able to introduce Industry 4.0, effectively promote and manage Industry 4.0 projects, and achieve digital transformation and smart upgrading for enterprises • Able to align with enterprise development goals, review the strategic objectives for an Industry 4.0 enterprise, and integrate business requirements to assist in formulating implementation plans and configuring the necessary hardware and software for database establishment • Able to visualise real-time data from the database, and present operational status through various visual formats, including real-time production status and whether key performance indicators are met
Remark	Organise and control the entire product lifecycle value chain from a new perspective, catering to increasingly personalised customer needs in the future. Connect each part of the value chain to collect relevant information in real time and derive the best value-added processes through real-time data analysis The connection between people and objects, equipment, and systems creates dynamic, real-time, self-organising, and self-optimising internal and cross-enterprise value-added connections, achieving optimal goals by considering factors such as resource costs, availability, and consumption Individuals who possess the above knowledge and competency are able to support the enterprise to achieve the Industry 4.0 digital maturity level of transparency (1i)