

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

Functional Area - Business Intelligence and Information Technology

Title	Establish and apply Industry 4.0 enterprise database, conduct data analysis, understand data-driven operation models, provide feedback recommendations to enhance departmental operations and performance
Code	111549L4
Range	This unit of competency is applicable to the business intelligence and information technology departments, marketing, sales and customer management departments / marketing departments, financial management and cost control departments / finance departments / accounts departments, process design and development departments / engineering departments, product manufacturing departments / production departments, supply chain management departments and product quality monitoring and testing departments / quality control departments of companies in the manufacturing technology industry. Practitioners should be capable to align with the company's development and establish and apply an Industry 4.0 enterprise database to enhance departmental operations and performance
Level	4
Credit	6
Competency	Performance Requirements - Understand relevant knowledge of establishing an Industry 4.0 enterprise database - Understand importance of data in achieving Industry 4.0 - Understand different cloud computing technologies, including infrastructure as a service (IaaS), platform as a service (PaaS), and software as a service (SaaS) - Understand current methods used by the enterprise to collect data and their accuracy - Understand hardware and software available in the market for collecting and organising real-time enterprise data - Understand methods and techniques for transmitting and storing real-time enterprise data - Understand data integration methods and techniques, including data collection, organisation, cleaning, and transformation - Be familiar with various cybersecurity methods and solutions suitable for Industry 4.0 operational environments - Establish Industry 4.0 enterprise database - Able to identify data collection and synchronisation frequencies to assist supervisors in determining the required hardware and software configurations for database setup - Able to recommend application of different cloud technologies to management for integrating enterprise data, including data transmission, storage, and processing - Able to collect and organise relevant real-time data according to the enterprise's and department's key performance indicators (KPIs) - Able to collect data digitally to reduce manual data entry and minimise errors - Able to connect and share database information across different systems (e.g., ERP, CRM, APS) to achieve a single source of data - Able to visualise real-time data from database using different visual formats to present operational status, including real-time production indicators, and continuously improve the database to enhance departmental operations and performance

	3. Professional handling of establish establishing Industry 4.0 enterprise database • Able to conduct a preliminary assessment of security, risk, and cost factors to ensure the safety of enterprise data and prevent any misuse or unauthorised access of data
Assessment Criteria	The integrated outcome requirements of this unit of competency are: • Able to align with the enterprise's development and assist supervisors in preparing the required hardware and software configurations to set up an Industry 4.0 enterprise database • Able to apply the enterprise database to visualise real-time data, present operational status in various visual formats (e.g., real-time production status and performance indicators), and continuously improve the database
Remark	IaaS (Infrastructure as a Service): A cloud computing service where the service provider delivers IT infrastructure over the internet. Users can access virtual resources without purchasing physical hardware or setting up their own infrastructure PaaS (Platform as a Service): A cloud computing service where the provider offers a development environment and tools over the internet, allowing users to develop and deploy applications without purchasing hardware or installing development platforms SaaS (Software as a Service): A cloud computing service where the provider delivers software over the internet, enabling users to directly access and use the software's functionalities 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)