1. Title	Use programmable logic controller (PLC) to upgrade control equipment
2. Code	EMCUDE502A
3. Range	For electrical and mechanical engineering design, use PLC human-machine interface software, groupware and PLC network system to write monitoring and management system programmes for electrical and mechanical equipment and production; and integrate PLC systems of different levels into a large PLC integrated production control, operation control, monitoring and management system.
4. Level	5
5. Credit	9
6. Competency	Performance Requirements

6. Competency (continued)

Performance Requirements

6.1 Operating principles of PLC software system

♦ Understand the operating principles of PLC software system

6.2 Use PLC to upgrade control equipment

♦ Use PLC human-machine interface software to set up the production control system
- Use PLC human-machine interface software, processor emulation software, programmable/testing software and communication software to write programmes and set up human-machine interface PLC electrical and mechanical equipment and production control system
- Test and debug the PLC human-machine interface control system
- Modify and rationalize the PLC human-machine interface control system

♦ Use PLC human-machine interface groupware to set up the monitoring, alarm and management system
- Use PLC human-machine interface groupware to set up label database and information list, and use the database to set up the alarm and management system
- Use groupware to save group data record, and use the analytical function to analyze group data trend to achieve the alarm and management functions
- Manage the safety of groupware data system

♦ Integrate PLC systems of different levels into a large PLC integrated monitoring and management system
- Use large PLC software and network software to integrate PLC systems of different levels into a large integrated production control, operation control, monitoring and management system

	• Use PLC software to help analyze data • Use information technology and network to transfer PLC data and information • Test and debug the large integrated PLC system
7. Assessment Criteria	The integrated outcome requirements of this unit of competency are: (i) Capable to use PLC human-machine interface software to set up a safe, reliable, accurate, convenient and direct operation monitoring, alarm and management system for electrical and mechanical equipment; and (ii) Capable to integrate different levels individual PLC systems of the same production line of a plant into a large integrated monitoring, alarm and management system.
8. Remarks	The credit value of this unit of competency is set on the presumption that the person already possesses basic computer knowledge.