1. Title	Install chilled water system equipment for air-conditioning and refrigeration	
2. Code	EMACIN304A	
3. Range	Perform installation of chilled water systems for air-conditioning and refrigeration at air-conditioning and refrigeration system rooms or installation sites.	
4. Level	3	
5. Credit	12	
6. Competency		Performance Requirements
	6.1 Knowledge of installing chilled water systems for air-conditioning and refrigeration	♦ Understand the engineering drawings of the chilled water system equipment for air-conditioning and refrigeration, including: • Reading the installation plans of the chilled water system equipment for air-conditioning and refrigeration (including air-handling unit, fan coil unit, expansion tank, cooling tower, pump, condenser and chiller plant) • Considering relevant requirements and limitations and identifying, at the work site, the installation position for the chilled water system equipment according to the layouts of the system equipment for air-conditioning and refrigeration and for other purposes ♦ Understand the construction and working principles of the typical equipment of the chilled water system for air-conditioning and refrigeration, including: • Describing the construction of air-handling units, fan coil units, expansion tanks, cooling towers, pumps, condensers, chiller plant and different types of valves and water system accessories • Describing the working principles of air-handling units, fan coil units, expansion tanks, cooling towers, pumps, condensers, chiller plant and different types of valves and water system accessories
	6.2 Methods and procedures of installing chilled water systems for air-conditioning and refrigeration	♦ Install the chilled water system equipment for air-conditioning and refrigeration, including: • Installing air-handling units, fan coil units, expansion tanks, cooling towers, pumps, condensers, chiller plant and different types of valves and water system accessories according to installation plans and general installation requirements • Installing different types of water system pipes, pipe support and accessories with the use of electric welding

		♦ Perform hydraulic pressure tests and pipeline wash for the chilled water system for air-conditioning and refrigeration, including: • Performing hydraulic pressure tests for the water system pipeline • Performing wash for the water system pipeline
	6.3 Professionalism in installing chilled water systems for air-conditioning and refrigeration	♦ Perform installation of chilled water system equipment for air-conditioning and refrigeration according to installation plans and specifications ♦ Understand the safety guidelines as required by the law and codes of practice and undertake tasks of installing chilled water system equipment for air-conditioning and refrigeration
7. Assessment Criteria	The integrated outcome requirements of this unit of competency are: (i) Capable to complete tasks of installing chilled water system equipment for air-conditioning and refrigeration systematically and efficiently; and (ii) Capable to undertake tasks of installing chilled water system equipment for air-conditioning and refrigeration safely according to codes of practice.	
8. Remarks	The credit value of this unit of competency is set on the presumption that the person already possesses basic knowledge and skills of installing chilled water systems for air-conditioning and refrigeration.	