1. Title	Test and measure operating parameters of air-conditioning and refrigeration systems	
2. Code	EMACIT301A	
3. Range	Use measuring instruments to test and measure the operating parameters of air-conditioning and refrigeration systems, at air-conditioning and refrigeration system machine rooms or work sites, in order to carry out the inspection, commissioning and testing of the systems.	
4. Level	3	
5. Credit	6	
6. Competency		Performance Requirements
	6.1 Knowledge of testing and measuring operating parameters of air-conditioning and refrigeration systems	♦ Understand the types and functions of typical instruments for measuring air-conditioning and refrigeration systems, including being able to: • Illustrate temperature measuring methods and the construction and working principles of various types of temperature measuring instruments • Illustrate relative humidity measuring methods and the construction and working principles of various types of relative humidity measuring instruments • Illustrate pressure measuring methods and the construction and working principles of various types of pressure measuring instruments • Illustrate air velocity measuring methods and the construction and working principles of various types of air velocity measuring instruments
	6.2 Methods and procedures of testing and measuring air-conditioning and refrigeration systems	♦ Measure the operating parameters of air-conditioning and refrigeration systems, including being able to: • Use typical thermometers to measure the temperature at all measuring points of air-conditioning and refrigeration systems • Use typical psychrometers to measure the relative humidity at all measuring points • Use typical pressure gauges to measure the pressure at all measuring points of air-conditioning and refrigeration systems • Use typical anemometers to measure the air velocity at all measuring points of air-conditioning systems ♦ Measure the dust concentration in the air, including being able to: • Measure the dust concentration in the air • Measure the efficiency of air filters at all levels in the air-conditioning systems

		♦ Detect refrigerant leaks, including being able to: • Use soap solution to detect refrigerant leaks from refrigeration systems • Use halogen lamp to detect refrigerant leaks from refrigeration systems • Use electronic leak detector to detect refrigerant leaks from refrigeration systems • Use visual observation to detect refrigerant leaks from refrigeration systems
	6.3 Professionalism in testing and measuring air-conditioning and refrigeration systems	♦ Understand the code of practice in order to undertake the tasks of testing and measuring the operating parameters of air-conditioning and refrigeration systems
7. Assessment Criteria	The integrated outcome requirements of this unit of competency are: (i) Capable to complete the testing and measurement of the operating parameters of various types of air-conditioning and refrigeration systems systematically and efficiently ; and (ii) Capable to follow the code of practice in order to undertake the tasks of testing and measuring the operating parameters of air-conditioning and refrigeration systems.	
8. Remarks	The credit value of this unit of competency is set on the presumption that the person already possesses elementary knowledge of air-conditioning and refrigeration.	