

1. Title	Design air-conditioning systems and equipment
2. Code	EMCUDE303A
3. Range	Understand the working principles of air-conditioning systems and equipment, and apply relevant knowledge and skills in air-conditioning and refrigeration engineering design.
4. Level	3
5. Credit	6
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Classification and working principles of air-conditioning systems</p> <ul style="list-style-type: none"> <li>◆ Understand the classification and working principles of air-conditioning systems and equipment <ul style="list-style-type: none"> <li>• Classification of air-conditioning systems according to the following: <ul style="list-style-type: none"> <li>▸ Application of air-conditioning</li> <li>▸ Degree of centralization of air handling equipment</li> <li>▸ Fluid media used in the thermal distribution system</li> <li>Method of adjusting air volume</li> <li>▸ Type of return air system</li> <li>▸ Air velocity in air ducts</li> </ul> </li> <li>• Understand the advantages and disadvantages of typical air-conditioning systems</li> <li>• Understand the applicability of typical air-conditioning systems</li> <li>• Understand the working principles of the component units of central air-conditioning system, including: <ul style="list-style-type: none"> <li>▸ Illustrating with diagrams the component units of a typical central air-conditioning system and its mode of operation</li> <li>▸ Construction and working principles of chiller plant</li> <li>▸ Construction and working principles of air handling equipment</li> <li>▸ Construction and working principles of air delivery system</li> <li>▸ Structure and working principles of chilled water system</li> <li>▸ Construction and working principles of automatic control equipment</li> </ul> </li> <li>• Working principles of unitary air-conditioning system, including: <ul style="list-style-type: none"> <li>▸ Construction and working principles of window type air-conditioner</li> </ul> </li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>▶ Construction and working principles of split type air-conditioner</li> <li>▶ Construction Structure and working principles of packaged type air-conditioner</li> </ul> <p>6.2 Design air-conditioning systems</p> <ul style="list-style-type: none"> <li>◆ Calculate parameters for comfort air-conditioning design according to design criteria</li> <li>◆ Calculate parameters for different types of industrial air-conditioning designs according to design criteria</li> </ul>
7. Assessment Criteria	<p>The integrated outcome requirement of this unit of competency is:</p> <p>(i) Capable to calculate parameters for comfort air-conditioning design and different types of industrial air-conditioning designs according to design criteria.</p>
8. Remarks	<p>The credit value of this unit of competency is set on the presumption that the person already possesses basic air-conditioning knowledge.</p>