

1. Title	Design air system of central air-conditioning system	
2. Code	EMACDE501A	
3. Range	Use specialized techniques, data analysis and innovative skills, at design studios, to perform tasks of designing air system of central air-conditioning system.	
4. Level	5	
5. Credit	12	
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Knowledge of designing air system of central air-conditioning system</p> <ul style="list-style-type: none"> <li>◆ Understand the classification and working principles of air system of central air-conditioning system , including: <ul style="list-style-type: none"> <li>• Classification of air system of central air-conditioning system</li> <li>• Working principles of all-fresh air systems</li> <li>• Working principles of fresh air and return air mixed systems</li> <li>• Working principles of constant air volume systems</li> <li>• Working principles of variable air volume systems</li> <li>• Working principles of fan coil unit with fresh air system</li> </ul> </li> <li>◆ Understand the classification, general specifications, selection criteria and layout principles of air ducts</li> </ul> <p>6.2 Methods and procedures of designing air system of central air-conditioning system</p> <ul style="list-style-type: none"> <li>◆ Calculate the data from the air-handling process, including: <ul style="list-style-type: none"> <li>• Calculating the volume of fresh air, temperature difference of supply air, summer and winter operating parameters with reference to a primary return air system</li> <li>• Calculating the summer operating parameters with reference to a secondary return air system</li> <li>• Selecting primary return or secondary return air systems</li> <li>• Calculating the conditioned air parameters of fan coil unit with fresh air system</li> </ul> </li> <li>◆ Design variable air volume systems, including: <ul style="list-style-type: none"> <li>• Selecting different types of terminal devices for a variable air volume system</li> <li>• Calculating the operating parameters of a variable air volume system</li> <li>• Selecting single air duct system or dual air duct system according to actual situations</li> </ul> </li> </ul>	

	<ul style="list-style-type: none"> <li>◆ Design air duct systems, including: <ul style="list-style-type: none"> <li>• Calculating the resistance and operating parameters of air duct systems</li> <li>• Determining correct cross-sectional area of air ducts so as to balance the total resistance</li> <li>• Laying down the specifications of air duct system equipment</li> </ul> </li> <li>◆ Design air outlets and air flow pattern, including: <ul style="list-style-type: none"> <li>• Determining the type of air distribution and the air flow pattern according to the characteristics and design requirements of the building</li> <li>• Selecting suitable supply air diffusers and return air diffusers</li> <li>• Calculating the operating parameters of side delivery of supply air</li> <li>• Calculating the operating parameters of supply air delivery by air diffusers</li> </ul> </li> </ul> <p>6.3 Professionalism in designing air system of central air-conditioning system</p> <ul style="list-style-type: none"> <li>◆ Lead a team to perform innovative tasks of designing air system of central air-conditioning system</li> <li>◆ Perform tasks of designing air system of central air-conditioning system according to legal requirements and codes of practice</li> </ul>
<p>7. Assessment Criteria</p>	<p>The integrated outcome requirements of this unit of competency are:</p> <p>(i) Capable to use specialized and innovative techniques to complete tasks of designing air system of central air-conditioning system ; and</p> <p>(ii) Capable to communicate with the sector and clients on issues relevant to the designing of air system of central air-conditioning system.</p>
<p>8. Remarks</p>	<p>The credit value of this unit of competency is set on the presumption that the person already possesses general knowledge of central air-conditioning systems.</p>