

1. Title	Assess the performance of AC/DC motors
2. Code	EMELDE316A
3. Range	Apply basic AC/DC circuit theories to assess the performance of AC/DC motors for general electrical and mechanical work such as large-scale compressors and exhaust fan.
4. Level	3
5. Credit	6
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Understand common AC/DC circuit theories and basic characteristics of general motors</p> <ul style="list-style-type: none"> <li>◆ Understand common AC/DC circuit theories</li> <li>◆ Understand the classification of common motors types</li> <li>◆ Understand basic characteristics of general DC motors, including magnetic flux, the relationship between speed, torque and voltage, armature reaction and its effects</li> <li>◆ Understand basic characteristics of general AC motors, including torque characteristics of single-phase motors, sync speed of three-phase motors, the relationship between slip and speed</li> </ul> <p>6.2 Apply basic AC/DC circuit theories to assess the performance of AC/DC/ motors</p> <ul style="list-style-type: none"> <li>◆ DC motors : draw the circuits of separately-excited, series-excited, shunt-excited and compound-excited DC motors, and assess the data of basic electrical, magnetic and mechanical performance</li> <li>◆ Single-phase motors : master torque characteristics of single-phase electric motors, and understand their start-up characteristics</li> <li>◆ Three-phase motors : <ul style="list-style-type: none"> <li>• Calculate the synchronous speed of three-phase motors, and calculate the relationship between slip and speed</li> <li>• Use torque-speed characteristic diagram to understand steady-state operating points of three-phase motors</li> </ul> </li> </ul>
7. Assessment Criteria	<p>The integrated outcome requirements of this unit of competency are:</p> <p>(i) Capable to apply basic AC/DC circuit theories to assess the data of basic electrical, magnetic and mechanical performance of common AC/DC, single-phase and three-phase motors.</p>
8. Remarks	The credit value of this unit of competency is set on the presumption that the person already possesses the competency of “EMELDE207A - Select appropriate AC/DC motors for electrical and mechanical installations”.