

1. Title	Assess the performance of power electronic control circuits
2. Code	EMELDE318A
3. Range	Assess the pertaining performance of common power electronic control circuits for general electrical and mechanical work, such as variable speed drive, soft starter and uninterruptible power supply system.
4. Level	3
5. Credit	6
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Understand common power electronics semiconductor devices</p> <ul style="list-style-type: none"> <li>◆ Understand the characteristics of common power electronics individual components such as silicon-controlled rectifier (SCR), triode for alternating current (TRIAC) and transistor</li> </ul> <p>6.2 Understand the control principle of power electronic control circuits and assess the performance of power electronic control circuits</p> <ul style="list-style-type: none"> <li>◆ Use simple input waveform graph to understand the current and voltage characteristics of power electronic switching components and the effect of gate current on them so as to control the load current</li> <li>◆ Calculate the voltage and current waveform at different point of the control circuit</li> <li>◆ Calculate the switching frequency, maximum current, etc. that the components can bear</li> <li>◆ Assess the performance of power electronic control circuits</li> </ul>
7. Assessment Criteria	<p>The integrated outcome requirements of this unit of competency are:</p> <p>(i) Capable to understand the conductivity of common power electronic switching components;</p> <p>(ii) Capable to calculate the voltage and current data at different points of the power electronic control circuits, and draw their waveforms; and</p> <p>(iii) Capable to assess the performance of power electronic control circuits.</p>
8. Remarks	