

1. Title	Basic tungsten inert gas (TIG) / gas tungsten arc welding (GTAW)
2. Code	EMCUIN212A
3. Range	Perform TIG/GTAW tasks for electrical and mechanical works on parent materials like carbon steel, stainless steel and aluminum alloy, at electrical and mechanical welding workshops or work sites.
4. Level	2
5. Credits	5
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Code of practice and Preparations for TIG/GTAW ♦ Understand relevant code of practice for TIG/GTAW, including to:</p> <ul style="list-style-type: none"> <li>• Operate TIG/GTAW equipment and accessories correctly and safely</li> <li>• Wear proper personal protective gear</li> <li>• Protect against electric shock</li> <li>• Protect against fire and explosion</li> <li>• Protect against harmful arc ray effectively</li> <li>• Protect against harmful gases and poisonous fumes</li> <li>• Follow the safety requirements and instructions on TIG/GTAW</li> </ul> <p>♦ Know about the preparations for TIG/GTAW, including:</p> <ul style="list-style-type: none"> <li>• Understand the general applications and their limitations of TIG/GTAW</li> <li>• Understand the types of TIG/GTAW machines and polarity requirements</li> <li>• Identify the requirements on welding materials of TIG/GTAW, such as tungsten electrode, welding rod and shielding gas</li> </ul> <p>6.2 Apply TIG/GTAW in welding ♦ Apply TIG/GTAW in the following areas:</p> <ul style="list-style-type: none"> <li>• Perform square edge butt weld at flat position and horizontal positions</li> <li>• Perform lap weld at flat position and horizontal positions</li> <li>• Perform fillet weld at flat position and horizontal positions</li> </ul> <p>♦ Identify various types of common and simple surface weld defects at welded joints, such as under cut, overlap and porosities</p> <p>♦ Avoid causing the simple surface weld defects mentioned above</p> <p>6.3 Professionalism in TIG/GTAW ♦ Perform TIG/GTAW tasks according to relevant safety guidelines and code of practice</p>
7. Assessment Criteria	<p>The integrated outcome requirement of this unit of competency is:</p> <p>(i) Capable to complete basic TIG/GTAW tasks without causing obvious surface weld defects; and</p> <p>(ii) Capable to perform TIG/GTAW tasks safely.</p>
8. Remarks	This unit of competency is applicable to general electrical and mechanical welding practitioners.