

1. Title	Perform tungsten inert gas (TIG) / gas tungsten arc welding (GTAW) according to drawings									
2. Code	EMCUIN324A									
3. Range	Perform general TIG /GTAW on parent materials like carbon steel, stainless steel and aluminum alloy according to drawings, at electrical and mechanical welding workshops or work sites.									
4. Level	3									
5. Credits	4									
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <table border="0"> <tr> <td style="vertical-align: top;">6.1</td> <td style="vertical-align: top;">Preparations for TIG /GTAW</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ◆ Understand the types of TIG /GTAW machines, their functions, arc characteristic and polarity ◆ Understand the TIG /GTAW requirements on welding consumable (e.g. tungsten electrode, welding wire, welding rod, shielding gas) ◆ Read the drawings correctly (including symbolisation of welding symbol and welding processes) ◆ Understand the code of safety for TIG /GTAW </td> </tr> <tr> <td style="vertical-align: top;">6.2</td> <td style="vertical-align: top;">Perform TIG /GTAW according to drawings</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ◆ Estimate the impact of welding procedures on the dimensions of work piece ◆ Perform assembly (including root opening, tack weld and anti-distortion procedure) and groove preparation (including preparing and cleaning the groove before welding) according to the drawing ◆ Perform visual examination on weld profile </td> </tr> <tr> <td style="vertical-align: top;">6.3</td> <td style="vertical-align: top;">Professionalism in TIG /GTAW</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ◆ Perform TIG /GTAW tasks according to relevant safety guidelines and code of practice </td> </tr> </table>	6.1	Preparations for TIG /GTAW	<ul style="list-style-type: none"> ◆ Understand the types of TIG /GTAW machines, their functions, arc characteristic and polarity ◆ Understand the TIG /GTAW requirements on welding consumable (e.g. tungsten electrode, welding wire, welding rod, shielding gas) ◆ Read the drawings correctly (including symbolisation of welding symbol and welding processes) ◆ Understand the code of safety for TIG /GTAW 	6.2	Perform TIG /GTAW according to drawings	<ul style="list-style-type: none"> ◆ Estimate the impact of welding procedures on the dimensions of work piece ◆ Perform assembly (including root opening, tack weld and anti-distortion procedure) and groove preparation (including preparing and cleaning the groove before welding) according to the drawing ◆ Perform visual examination on weld profile 	6.3	Professionalism in TIG /GTAW	<ul style="list-style-type: none"> ◆ Perform TIG /GTAW tasks according to relevant safety guidelines and code of practice
6.1	Preparations for TIG /GTAW	<ul style="list-style-type: none"> ◆ Understand the types of TIG /GTAW machines, their functions, arc characteristic and polarity ◆ Understand the TIG /GTAW requirements on welding consumable (e.g. tungsten electrode, welding wire, welding rod, shielding gas) ◆ Read the drawings correctly (including symbolisation of welding symbol and welding processes) ◆ Understand the code of safety for TIG /GTAW 								
6.2	Perform TIG /GTAW according to drawings	<ul style="list-style-type: none"> ◆ Estimate the impact of welding procedures on the dimensions of work piece ◆ Perform assembly (including root opening, tack weld and anti-distortion procedure) and groove preparation (including preparing and cleaning the groove before welding) according to the drawing ◆ Perform visual examination on weld profile 								
6.3	Professionalism in TIG /GTAW	<ul style="list-style-type: none"> ◆ Perform TIG /GTAW tasks according to relevant safety guidelines and code of practice 								
7. Assessment Criteria	<p>The integrated outcome requirements of this unit of competency are:</p> <p>(i) Capable to follow the safety instructions and code of practice to apply TIG /GTAW in one-side full-penetration butt welding at flat position, at horizontal position, at vertical-up position and at vertical-down positions, according to drawings, on different parent materials; and</p> <p>(ii) Capable to apply TIG /GTAW in fillet welding at flat position, at horizontal position, at vertical-up position, at vertical-down position and at overhead positions, according to drawings, on different parent materials.</p>									
8. Remarks	This unit of competency is suitable for enhancing the competency of electrical and mechanical welding practitioners. The credit value of this unit of competency is set on the presumption that the person already possesses the competency of EMCUIN212A “Basic tungsten inert gas (TIG) / gas tungsten arc welding (GTAW)”.									