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| 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"> • Operate TIG/GTAW equipment and accessories correctly and safely • Wear proper personal protective gear • Protect against electric shock • Protect against fire and explosion • Protect against harmful arc ray effectively • Protect against harmful gases and poisonous fumes • Follow the safety requirements and instructions on TIG/GTAW <p>♦ Know about the preparations for TIG/GTAW, including:</p> <ul style="list-style-type: none"> • Understand the general applications and their limitations of TIG/GTAW • Understand the types of TIG/GTAW machines and polarity requirements • Identify the requirements on welding materials of TIG/GTAW, such as tungsten electrode, welding rod and shielding gas <p>6.2 Apply TIG/GTAW in welding ♦ Apply TIG/GTAW in the following areas:</p> <ul style="list-style-type: none"> • Perform square edge butt weld at flat position and horizontal positions • Perform lap weld at flat position and horizontal positions • Perform fillet weld at flat position and horizontal positions <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. |