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| 1. Title | Basic manual metal arc welding (MMAW)/shielded metal arc welding (SMAW) |
| 2. Code | EMCUIN225A |
| 3. Range | Perform basic MMAW/SMAW on typical carbon-steel metals at electrical and mechanical welding workshops or work sites. |
| 4. Level | 2 |
| 5. Credits | 6 |
| 6. Competency | <p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Code of practice and safety regulations for MMAW/SMAW</p> <ul style="list-style-type: none"> ◆ Understand relevant code of practice and safety regulations for MMAW/SMAW, including: <ul style="list-style-type: none"> • Wearing proper personal protective gear • Protecting against electric shock • Protecting against fire and explosion • Protecting against harmful arc ray effectively • Protecting against harmful gases and poisonous fumes ◆ Know about the preparations for MMAW/ SMAW, including: <ul style="list-style-type: none"> • Understanding the general application and their limitations of MMAW/SMAW • Understanding the types of MMAW/SMAW machines and their functions • Knowing about the specifications, applications, uses and storage of common mild-steel electrodes (such as E6013) for MMAW/SMAW • Knowing about the maintenance of MMAW/SMAW equipment <p>6.2 Methods and procedures for operating MMAW/SMAW</p> <ul style="list-style-type: none"> ◆ Apply MMAW/SMAW technique in welding <ul style="list-style-type: none"> • Select proper parameters for welding, such as polarity, current, welding speed and angle of electrode • Perform tasks including: <ul style="list-style-type: none"> ▶ Performing linear surface buildup at flat position ▶ Joining two or more work pieces together at flat position ▶ Performing two sides square edge butt welding at flat position ▶ Performing fillet weld at flat position ◆ Maintenance of electric arc welding equipment <ul style="list-style-type: none"> • Undertake maintenance of MMAW/SMAW equipment • Use and store common instruments and welding materials <p>6.3 Professionalism in MMAW/SMAW</p> <ul style="list-style-type: none"> ◆ Perform MMAW/SMAW tasks according to relevant safety guidelines and code of practice |

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| 7. Assessment Criteria | The integrated outcome requirement of this unit of competency is: (i) Capable to complete basic MMAW/SMAW tasks without causing obvious surface weld defects; and (ii) Capable to perform MMAW/SMAW tasks safely. |
| 8. Remarks | This unit of competency is applicable to general electrical and mechanical welding practitioners. |