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| 1. Title      | Design the protection against electric shock in electrical system                                                                                           |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 2. Code       | 111495L3                                                                                                                                                    |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. Range      | Applicable to design and installation of electrical work, which involves implementing the design of protection against electric shock of electrical system. |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. Level      | 3                                                                                                                                                           |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. Credit     | 3                                                                                                                                                           |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 6. Competency |                                                                                                                                                             |                                                                                                                                                                                                                                                           | <u>Performance Requirements</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|               | 6.1                                                                                                                                                         | Understand the definition of electrical shock                                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>◆ Understand the definition of direct and indirect contact of electric shock.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|               | 6.2                                                                                                                                                         | Master various electrical design concept of protection against electric shock using combined protection against both direct & indirect contacts, protection by separated extra-low voltage (SELV) system, Protection by limitation of discharge of energy | <ul style="list-style-type: none"> <li>◆ Interpret below working principles of protection against direct contact of electric shock: <ul style="list-style-type: none"> <li>➤ protection by insulation of live parts,</li> <li>➤ protection by barriers or enclosures,</li> <li>➤ protection by obstacles,</li> <li>➤ protection by placing out of reach.</li> </ul> </li> <li>◆ Interpret below working principles of protection against indirect contact of electric shock: <ul style="list-style-type: none"> <li>➤ classification of means of protection against electric shock,</li> <li>➤ protection by class II equipment or equivalent insulation.</li> </ul> </li> <li>◆ Interpret the working principles of protection against electric shock using extra-low voltage systems.</li> <li>◆ Interpret the working principles of protection against electric shock using Earthed Equipotential Bonding &amp; Automatic Disconnection of Supply (EEBADS) according to the Institution of Engineering and Technology (IET) Regulations – terminology &amp; general, EEBADS in a TT system, EEBADS in a TN system, EEBADS according to the Code of Practice - socket outlet circuits, fixed equipment circuits inside equipotential zone, fixed equipment circuits outside equipotential zone, installation supplied from overhead line system, distribution circuits supplying circuits for both socket outlets and fixed equipment.</li> </ul> |

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|                        | 6.3                                                                                                                                                                                                                                                                                                                                                                         | Exhibit professionalism in designing protection against electric shock | ♦ Follow the Code of Practice for the Electricity (Wiring) Regulations and relevant standards in designing protection against electric shock. |
| 7. Assessment Criteria | <p>The integrated outcome requirements of this unit of competency are:</p> <p>(i) Capable to interpret the design and operating principle of protection against electric shock and implement combined protection against both direct &amp; indirect contacts, protection by separated extra-low voltage (SELV) system, protection by limitation of discharge of energy.</p> |                                                                        |                                                                                                                                               |
| 8. Remarks             | <p>The credit value of this unit of competency is set on the presumption that the person already possesses basic electrical and mechanical knowledge.</p>                                                                                                                                                                                                                   |                                                                        |                                                                                                                                               |