

1. Title	Design low voltage power systems fed by a single transformer
2. Code	EMELDE416A
3. Range	Applicable to the design of low voltage distribution system and associated installations. Implement the design of a low voltage power supply system directly fed by a single transformer, including relevant power supply arrangement and protection and control circuits.
4. Level	4
5. Credit	9
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Basic design concept of general low voltage power systems directly fed by a single transformer</p> <ul style="list-style-type: none"> <li>◆ Understand the basic design concept and requirements on the power supply arrangement, protection and control circuits, wiring method and various kinds of final circuits of the directly fed by a single transformer, such as: <ul style="list-style-type: none"> <li>• Low voltage switchboard, busbar, riser capacity calculation and organization</li> <li>• Circuit isolation, circuit organization management, classification of circuits</li> <li>• Overcurrent protection and ground fault protection</li> <li>• Earthing system</li> <li>• Calculation of current demand and selection of cables</li> <li>• Surface wiring system</li> <li>• Concealed wiring system</li> <li>• Ring and radial socket circuit</li> <li>• Various kinds of lighting circuits</li> </ul> </li> </ul> <p>6.2 Implement basic distribution and final circuit design for low voltage electrical installations</p> <ul style="list-style-type: none"> <li>◆ Implement basic distribution and final circuit design for low voltage electrical installations according to power supply design requirements for general low voltage power systems, such as the distribution arrangement, protection and control circuits, wiring method, earthing systems, various kinds of final circuits of low voltage switchboard, busbar and riser</li> </ul> <p>6.3 Professionalism in designing low voltage power systems directly fed by a single transformer</p> <ul style="list-style-type: none"> <li>◆ Follow the Electricity (Wiring) Regulations and their Code of Practice to design low voltage power systems directly fed by a single transformer</li> </ul>

7. Assessment Criteria	The integrated outcome requirements of this unit of competency are:  (i) Capable to understand the basic design concept and requirements for low voltage power systems directly fed by a single transformer; and  (ii) Capable to implement the design of basic distribution, final circuits, and protection and control circuits for low voltage power systems according to the technical and legal requirements.
8. Remarks	