

1. Title	Formulate overall design requirements for electric trains and diesel locomotives and coordinate the design requirements of all parts
2. Code	EMRADE601A
3. Range	Formulate overall design requirements for electric trains and diesel locomotives according to the overall railway system design, and coordinate different design units, according to the classification of equipment systems of electric trains and diesel locomotives, to formulate design requirements for the equipment systems
4. Level	6
5. Credits	20
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Review, integrate and apply the performance requirements and design guidance information for trains and diesel locomotives</p> <ul style="list-style-type: none"> <li>◆ Master the techniques of reviewing, assessing and integrating performance requirements for trains and diesel locomotives e.g. safety, reliability, comfort, etc., and overall design guidance information for trains and diesel locomotives</li> <li>◆ Analyze, integrate and develop the information on the overall railway system design into the basis of the overall design of electric trains and diesel locomotives</li> <li>◆ By applying specialized train and diesel locomotive engineering knowledge, develop the requirements for the overall design into performance requirements for various component system equipment</li> </ul> <p>6.2 Procedures of formulating overall design requirements for electric trains and diesel locomotives and coordinating the design requirements for various component systems</p> <ul style="list-style-type: none"> <li>◆ Capable to formulate overall design requirements for electric trains according to overall design guidance information for electric trains and the requirements on safety, reliability, comfort, environmental protection and efficiency</li> <li>◆ Capable to coordinate and formulate the design requirements for various equipment systems according to the overall design requirements for electric trains and the classification of train equipment including electrical systems, power systems, mechanical systems, brake systems, pneumatic systems, auxiliary and air-conditioning systems, and control and protection systems</li> <li>◆ Capable to formulate overall design requirements for diesel locomotives according to overall design guidance information for diesel locomotives and the requirements on safety, reliability, environmental protection and efficiency</li> <li>◆ Capable to coordinate and formulate the design requirements for various equipment systems according to the overall design requirements for diesel locomotives and the classification of diesel locomotive equipment including diesel engines, generators, power systems, brake systems, pneumatic systems, auxiliary systems, and control and protection systems</li> </ul>

	<p>6.3 Professionalism in formulating overall design requirements for electric trains and diesel locomotives and design requirements for various component systems</p> <ul style="list-style-type: none"> <li>◆ Capable to formulate overall design requirements for electric trains and diesel locomotives and design requirements for various component systems according to the standards and requirements for safety, health, environmental protection and quality management of railway works</li> <li>◆ Understand the safety guidelines as required by the law and codes of practice in formulating overall design requirements for electric trains and diesel locomotives and design requirements for various component systems</li> </ul>
7. Assessment Criteria	<p>The integrated outcome requirement of this unit of competency is:</p> <ul style="list-style-type: none"> <li>(i) Capable to draft design requirements for specified major equipment systems of electric trains according to the overall design requirements for electric trains; and</li> <li>(ii) Capable to draft design requirements for specified major equipment systems of diesel locomotives according to the overall design requirements for diesel locomotives.</li> </ul>
8. Remarks	<p>The credit value of this unit of competency is set on the presumption that the person already possesses professional knowledge of train design engineering.</p>