

1. Title	Formulate an overall electric train and diesel locomotive design plan and standard	
2. Code	EMRADE607A	
3. Range	Formulate an overall electric train and diesel locomotive design plan and standard, including the overall design of the train fleet, according to the overall railway system design.	
4. Level	6	
5. Credits	20	
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Basis and skills for an overall electric train and diesel locomotive design</p> <ul style="list-style-type: none"> ◆ Be familiar with the concept, performance requirements and standard of the overall electric train and diesel locomotive design ◆ Master the expertise, including electrical and mechanical knowledge, in railway works in various disciplines, and apply the expertise in design concept and operation by putting forward innovative ideas and transforming them into useful information ◆ Master the knowledge and skills in studying, analyzing and judging the concept, information and performance requirement data of the overall electric train and diesel locomotive design; and calculate, consolidate and expand such data and information to become the basis and standard of the overall electric train and diesel locomotive design ◆ Master the skills of analyzing, reorganizing and evaluating performance data of electrical and mechanical system equipment of the railway and the peripheral equipment so as to apply in judging, formulating and reviewing the overall electric train and diesel locomotive design plan and standard ◆ Master the skills in analyzing, reviewing and judging the application of new technologies and equipment <p>6.2 Methods and procedures of formulating overall electric train and diesel locomotive design plan and standard</p> <ul style="list-style-type: none"> ◆ Follow the overall railway system design concept, including the expected passenger volume, distribution, train frequency, journey time, route environment and station, as well as the requirements on safety, reliability, comfort, environmental protection and efficiency to formulate an overall electric train design plan, including the number of set of cars for the whole electric train fleet, the combination of the set of cars for each train, carrying capacity and guidelines for the overall design of each set of cars 	

	<ul style="list-style-type: none"> ◆ Follow the overall railway system design concept, including the required dragging and driving power, the journey time and route environment, as well as the requirements on safety, reliability, environmental protection and efficiency to formulate an overall diesel locomotive design plan, including the number of diesel locomotives for the whole fleet, the dragging and driving power and working capacity and guidelines for the overall diesel locomotive design ◆ Lay down design standard for the design plan of the train fleet for future expansion and in coordination with other vehicles using the railway <p>6.3 Professionalism in formulating overall electric train and diesel locomotive design plan and standard</p> <ul style="list-style-type: none"> ◆ Formulate the overall electric train and diesel locomotive design plan and standard according to the standards and requirements for safety, health, environmental protection and quality management of railway works ◆ Understand the safety guidelines as required by the law and codes of practice when formulating the overall electric train and diesel locomotive design plan and standard
7. Assessment Criteria	<p>The integrated outcome requirement of this unit of competency is:</p> <p>(i) Capable to use the overall railway system design concept and follow relevant requirements to draft an overall design plan for electric trains, including the number of set of cars for the whole electric train fleet, the combination of the set of cars for each train, carrying capacity and guidelines for the overall design of each set of cars; and</p> <p>(ii) Capable to use the overall railway system design concept and follow relevant requirements to draft an overall design plan for diesel locomotives, including the number of diesel locomotives for the whole fleet, the dragging and driving power and working capacity and guidelines for the overall diesel locomotive design.</p>
8. Remarks	<p>The credit value of this unit of competency is set on the presumption that the person already possesses the expertise in electrical and mechanical works in various disciplines and railway operation.</p>