1. Title	Design the mechanical structure and line location of the railway overhead feeder system	
2. Code	EMRADE517A	
3. Range	Design the mechanical structure and line location of the railway overhead feeder system basing on the data calculations of mechanical dynamics for the overhead line support and considering the train speed and the type of the pantographs.	
4. Level	5	
5. Credits	6	
6. Competency		Performance Requirements
	6.1 Information and factors for the design of the mechanical structure of the railway overhead feeder system	♦ Master the techniques of calculating the stress on the overhead line and supporting line ♦ Master the techniques of calculating the stress on the overhead line support ♦ Master the techniques of calculating the stress on the insulation devices ♦ Capable to consider the geographical factor ♦ Be familiar with the types and applications of railway overhead line support and supporting line
	6.2 Methods and procedures of designing the mechanical structure and line location of the railway overhead feeder system	♦ Design the location of the power line support correctly according to data calculations and operation of the railway so as to evenly distribute the contact points of pantographs and the power line ♦ Design and select suitable support for use according to data calculations ♦ Design the tension of the contact power line according to the train speed requirements so as to maximize the efficiency of the pantographs of trains
	6.3 Professionalism in designing the mechanical structure and line location of the railway overhead feeder system	♦ Design the mechanical structure and line location of the railway overhead feeder system according to the standards and requirements for work safety, health, environmental protection and quality management of railway works ♦ Understand the safety guidelines as required by the law and codes of practice in handling the tasks of designing the mechanical structure and line location of the railway overhead feeder system

7. Assessment Criteria	The integrated outcome requirement of this unit of competency is: (i) Capable to calculate the dynamic data of the power line and support correctly and design an efficient and reliable railway overhead feeder system, and its mechanical structure and line location according to the design requirements and standards of the overall railway system and the railway overhead feeder system, and the safety guidelines and codes of practice.
8. Remarks	The credit value of this unit of competency is set on the presumption that the person already possesses comprehensive knowledge of mechanical dynamics.