1. Title	Design rectifiers for the railway DC overhead feeder system
2. Code	EMRADE520A
3. Range	Design the railway DC overhead feeder system to ensure the stability of the DC voltage.
4. Level	5
5. Credits	6
6. Competency	Performance Requirements 6.1 Working principles of the power rectifier ♦ Be familiar with the working principles of advanced power rectifiers, including application of typical power electronic parts and understand their characteristics ♦ Capable to calculate the rectification data ♦ Master the techniques of controlling the rectifiers 6.2 Methods and procedures of designing rectifiers for the railway DC overhead feeder system ♦ Apply the theory of power rectifier to the railway DC power supply system, consider the factor of full railway length, and design the location of rectifier stations, ensuring that the value of DC output voltage is within an acceptable range ♦ Design an efficient and reliable railway DC overhead feeder system ♦ Design an efficient and reliable electricity return circuit including the cathodic protection ♦ Design an efficient control circuit for the rectifier ♦ Design an efficient protection circuit for the rectifier 6.3 Professionalism in designing rectifiers for the railway DC overhead feeder system ♦ Design the rectifiers for the railway DC 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 rectifiers for the railway DC overhead feeder system
7. Assessment Criteria	The integrated outcome requirement of this unit of competency is: (i) Capable to use power electronic parts to design efficient and reliable rectifiers for the railway DC overhead feeder system and ensure the stability of the output voltage according to the design requirements and standards of the overall railway system and the railway DC overhead feeder system devices, and the safety guidelines and codes of practice; and (ii) Capable to design efficiently protection devices for the railway DC overhead feeder system according to design standards.
8. Remarks	The credit value of this unit of competency is set on the presumption that the person already possesses advanced knowledge of power rectification.