

1. Title	Test and select materials for train equipment components	
2. Code	EMRAMA504A	
3. Range	Design and select appropriate testing methods according to the purpose and nature, monitor the conduct of tests under controlled environment, record and analyze data and select better materials for application.	
4. Level	5	
5. Credits	6	
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Methods of selecting and designing material testing</p> <ul style="list-style-type: none"> ◆ Select the methods for material testing according to the purpose and nature of testing, such as: <ul style="list-style-type: none"> • Using laboratory experiments to test the material strength • Using the mode for operating under controlled environment to speed up the testing of material durability • Using the mode for operating on site to test the performance and actual wear rate • Using simulation modes to test the material performance under specified environment ◆ Apply relevant knowledge and skills, after selecting the testing mode, to design appropriate testing methods according to the purpose <p>6.2 Procedures of testing and selecting component materials</p> <ul style="list-style-type: none"> ◆ Monitor and record the testing environment so as to ensure that the operation is under expected environment ◆ Apply statistical knowledge and skills to select reliable data ◆ Apply statistical and analytical theories, such as linear regression and numeric calculus to analyze testing data ◆ Select better materials for application after analysis <p>6.3 Testing and selecting materials for train equipment components</p> <ul style="list-style-type: none"> ◆ Test and select materials for train equipment components 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 testing and selecting materials for train equipment components 	

7. Assessment Criteria	The integrated outcome requirement of this unit of competency is: (i) Capable to select testing modes and design testing methods effectively according to specified purposes for material testing; (ii) Capable to undertake tests and record data efficiently, analyze systematically and effectively the performance and durability of materials from a wide range of data and select better materials for application.
8. Remarks	The credit value of this unit of competency is set on the presumption that the person already possesses professional knowledge of mechanical material engineering.