1. Title	Repair the faults in pneumatic friction brake systems of trains
2. Code	EMRAOR303A
3. Range	Identify and repair the faults in pneumatic friction brake systems and control equipment at train maintenance centres or during operation of trains.
4. Level	3
5. Credits	7
6. Competency	Performance Requirements 6.1 Structure and working principles of pneumatic friction brake systems and equipment of trains ♦ Understand the structure and working principles of the pneumatic friction brake systems and equipment of trains ♦ Be familiar with the control circuits and pipe lines of the pneumatic friction brake systems of trains 6.2 Methods and procedures of finding and repairing the faults in pneumatic brake systems and equipment of trains ♦ Able to read the electrical and pneumatic engineering drawings and check the circuits and pneumatic pipe lines systematically and efficiently ♦ Check the pneumatic friction brake systems and equipment of trains to find the root causes of faults according to the fault symptoms, including • Electric-controlled pneumatic brake circuits • Control brake pneumatic pipe lines • Emergency brakes and protection brake loops • Pneumatic brake and anti-magnetic / regenerative brake interface devices ♦ Check and test the mechanical devices of train brakes to find the root causes of faults according to the fault symptoms, including • Brake actuators • Brake control pneumatic pipe lines • Brake pads and brake pad hangers ♦ Check and test the train wheel slide protection devices to find the root causes of faults according to the fault symptoms, including • Electronic control equipment • Control circuits and equipment • Control pneumatic pipe lines and equipment ♦ Check the parking brake equipment to find the root causes of faults according to the fault symptoms, including • Parking brake actuators • Parking brake control circuits and equipment

		♦ Repair the faults after identifying the fault equipment or components ♦ Use general electrical and pneumatic device repairing and testing instruments and tools efficiently
	6.3 Professionalism in repairing faults in pneumatic friction brake systems of trains	♦ Understand the safety guidelines as required by the law and codes of practice in removing faults in pneumatic friction brake systems of trains
7. Assessment Criteria	The integrated outcome requirement of this unit of competency is: (i) Capable to identify the faults in the pneumatic brake system control circuits within a reasonable period of time according to the fault symptoms; (ii) Capable to identify the faults in the control equipment of pneumatic brake systems within a reasonable period of time according to the signs of faults; and (iii) Capable to identify the faults in the train wheel slide protection devices within a reasonable period of time according to the fault symptoms.	
8. Remarks	The credit value of this unit of competency is set on the presumption that the person already possesses basic knowledge of electrical, mechanical and pneumatic equipment.	