1. Title	Detect underground facilities
2. Code	EMELIT304A
3. Range	Applicable to underground pipe detection. Read various kinds of underground facilities layout plans, use different active detection methods to implement underground facilities detection, accurately analyze the results, write detailed detection report and records, and formulate guidelines for road excavation.
4. Level	3
5. Credit	9
6. Competency	Performance Requirements 6.1 Understand the characteristics of various kinds of underground facilities, the method of reading underground facilities layout plans, and technologies for active mode detection ♦ Know about the nature and uses of various kinds of metal and non-metal pipes ♦ Know about the nature and uses of various kinds of cables for non-power purpose ♦ Understand various kinds of active detection methods, principle, scanning application technologies and constraints such as: radar, direct signal injection, signal transmission probe, signal tracking rod, noise detection system, intelligent label sensor, pipe CCTV inspection, etc. ♦ Understand the content of various kinds of underground facilities layout plans ♦ Know about the methods and code of practice for topographic survey and field marking ♦ Master the methods of collecting effective survey data including that of: • underground facilities alignment position • underground facilities movement direction • underground facilities depth measurement ♦ Master the method of drawing sketches and actual layout plans of underground facilities 6.2 Implement underground facilities detection ♦ Implement detection of underground facilities, except power cables, according to the technical requirements and drawings of underground facilities such as: • Communications cable • Fresh water pipe • Sewer • Rainwater pipe • Gas main

		♦ Accurately analyze the distribution of underground facilities according to detection data, and draw the actual layout plan for the underground facilities ♦ Write a detailed detection report, record and actual layout for the underground facilities, and formulate guidelines for road excavation, including the quantity, alignment position, movement direction and depth of underground facilities; safety precautions, etc.
	6.3 Professionalism in detecting underground facilities	♦ Follow the regulations and relevant codes of practice to ensure that underground facilities are correctly located, and properly protected against damage
7. Assessment Criteria	The integrated outcome requirements of this unit of competency are: (i) Capable to implement underground facilities detection according to the drawings of underground facilities; and (ii) Capable to write a detailed detection report on the detection results of the underground facilities, and record the actual layout plan of the underground facilities.	
8. Remarks		