

1. Title	Design water-based fire systems and equipment
2. Code	EMFSDE501A
3. Range	Analyze, reorganize, assess and integrate information critically by dealing with abstract ideas and concepts; instruct subordinates to perform different levels of tasks of designing water-based fire systems and equipment according to client needs, building codes and limitations.
4. Level	5
5. Credit	6
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Knowledge of designing water-based fire systems and equipment</p> <ul style="list-style-type: none"> ◆ Master the construction, working principles and characteristics of different types of water-based fire systems and equipment, including: <ul style="list-style-type: none"> • Sprinkler system • Fire hydrant/hose reel system • Drencher system • Deluge system • Water spray system ◆ Understand building uses, architectural design codes and client needs ◆ Understand the design standards and major requirements of water-based fire systems and equipment, including: <ul style="list-style-type: none"> • The Code of Practice for Fire Service Installations and Equipment • Recognized international standards (BSEN, NFPA) <p>6.2 Design water-based fire systems and equipment</p> <ul style="list-style-type: none"> ◆ Lead subordinates to perform various types of tasks of designing water-based fire systems and equipment according to client needs, manufacturer guidelines, recognized standards and relevant local regulations ◆ Formulate the system drawings and outline design layout plans of various types of equipment according to building codes and limitations ◆ Calculate and determine the performance requirements and the size of pumps and other water-based systems and equipment according to building codes and limitations, including: <ul style="list-style-type: none"> • Calculating the resistance of piping system • Determining the required pump flow rate and pressure • Tank capacity • Calculating other operation data of the water-based system ◆ Formulate the specifications of various types of water-based fire systems and equipment and select relevant equipment

	<p>6.3 Professionalism in designing water-based fire systems and equipment</p> <ul style="list-style-type: none"> ◆ Lead subordinates to design water-based fire systems according to legal requirements, codes of practice and design standards
<p>7. Assessment Criteria</p>	<p>The integrated outcome requirements of this unit of competency are:</p> <ul style="list-style-type: none"> (i) Capable to apply special and innovative techniques and lead subordinates to perform tasks of designing water-based fire systems and equipment according to client needs and building codes and limitations; and (ii) Capable to provide the sector and clients with designs of water-based fire systems and equipment.
<p>8. Remarks</p>	<p>The credit value of this unit of competency is set on the presumption that the person already possesses general knowledge of water-based fire systems and equipment.</p>