1. Title	Apply fire dynamics and fire simulation techniques
2. Code	EMFSDE601A
3. Range	Master the principles of fire dynamics and the application of computational fluid dynamics (CFD) simulation software, in a number of complicated situations/conditions, at locations where the design of major fire systems is involved.
4. Level	6
5. Credit	6

6. Competency	Performance Requirements
	6.1 Theory of fire dynamics
	 ◆ Understand the theory of the complicated combustion phenomena, including:
	  • Heat current effect generated by flames
	  • Fume generated in combustion and its flow change
	  • Heat release rate, heat energy and temperature change related to flames and fume
	  • Combustion change inside the space
	
	6.2 Methods and applications of fire simulation
	 ◆ Master the methods and applications of fire simulation in a number of complicated situations/conditions, including:
	  • Zone model
	  • Field model
	  • Use of CFD simulation software (FPETOOL, FIRECAL) for simulating fire scenes

7. Assessment Criteria	The integrated outcome requirements of this unit of competency are: (i) Capable to predict combustion change data in a number of complicated situations/conditions; and (ii) Capable to use CFD simulation software for evaluation of simulated fire scenes.
8. Remarks	The credit value of this unit of competency is set on the presumption that the person already possesses knowledge of designing various types of conventional fire systems.