

**SKILLS FRAMEWORK FOR ENERGY AND CHEMICALS
SKILLS MAP - CHIEF ENGINEER/FELLOW**

Sector	Energy and Chemicals			
Track	Production and Process Engineering/Engineering and Maintenance			
Occupation	Engineer			
Job Role	Chief Engineer/Fellow			
Job Role Description	<p>The Chief Engineer/Fellow is responsible for the strategic planning and design of complex engineering solutions to meet customers' requirements. He/She drives the direction and strategy for the development and implementation of engineering projects, and provides concise design criteria and process constraint considerations for capital projects such as plant improvements and/or expansions.</p>			
	<p>The Chief Engineer/Fellow leads engineering research for the adoption of new technologies and equipment to enhance the organisation's operational excellence and business competitiveness. He advises on advanced methods and techniques to ensure a sound asset integrity management system. He provides technical expertise for the review of the organisation's Major Hazard Installation (MHI) Safety Case and leads Process Safety Management (PSM) audit and compliance reviews, in compliance with Workplace Safety and Health (WSH), Environmental Management System (EMS) and PSM requirements. At the organisational level, he designs the organisation's technology roadmap and drives continuous improvement strategies. In addition, he leverages on his deep technical expertise and industry experience to develop technical capabilities for engineering teams and domain expertise for the organisation.</p>			
	<p>The Chief Engineer/Fellow is the organisation's technical expert who advises senior management and business partners on advanced engineering matters. He maintains and builds strong links with the external engineering community and establishes best practises in the implementation of engineering standards and design. He is a strategic and creative thinker, demonstrates exceptional problem-solving and communication skills, and networks effectively.</p>			
Critical Work Functions and Key Tasks	Critical Work Functions		Key Tasks	
	Administer Workplace Safety and Health (WSH) and Environmental Management Systems (EMS)		Drive compliance with WSH and EMS systems at organisational level	
	Administer Process Safety Management (PSM) systems		Lead PSM audit and compliance reviews	
			Technically review the organisation's Major Hazard Installation (MHI) Safety Case	
	Manage engineering projects		Drive direction and strategies for the development and implementation of engineering projects	
			Establish best practices in the implementation of engineering standards and design	
			Provide concise design criteria and process constraints in the management of capital projects for process facilities expansions or improvements	
			Provide technical expertise and validate process safety reviews for plant operations, Management of Change (MOC) projects and new projects	
	Manage asset integrity		Act as advisor to top management and business partners on advanced methods and techniques to ensure sound asset integrity management systems	
			Lead engineering research for adoption of new technologies and equipment to enhance business competitiveness	
	Manage equipment automation and optimisation		Drive the research and adoption of new technologies for data analytics	
			Provide leadership and direction for new technologies and equipment for operational excellence	
	Administer staff and organisational development		Build in-house technical capabilities for engineering teams	
		Contribute to the development of business continuity plans		
		Design the organisation's technology roadmap through the analysis of market trends and external drivers		
		Drive continuous improvement strategies at organisational level		
		Drive the adoption of technologies to support virtual collaboration in remote locations		
		Provide leadership to uphold and shape the organisation's culture, values and behaviour		
Skills & Competencies	Technical Skills and Competencies		Generic Skills and Competencies (Top 5)	
	Asset Integrity Management	Level 5	Leadership	Advanced
	Business Networking Management	Level 6	Communication	Advanced
	Change Management	Level 6	Transdisciplinary Thinking	Advanced
	Continuing Professional Development Management	Level 5	Decision Making	Advanced
	Continuous Improvement Management	Level 6	Global Mindset	Advanced
	Data Analytics System Design	Level 5		
	Data and Statistical Analytics	Level 6		
	Engineering Project Management	Level 5		
	Engineering Safety Standards Interpretation	Level 5		
Engineering Support Management	Level 5			

Skills & Competencies	Engineering, Procurement and Construction Management	Level 5	
	Environmental Management System Framework Development and Implementation	Level 5	
	Equipment and System Value Engineering Management	Level 5	
	Inspection Engineering Management	Level 6	
	Internet of Things Management	Level 5	
	Maintenance Integrity and Reliability Framework Development and Implementation	Level 6	
	Major Hazard Installation Safety Case Management	Level 6	
	Plant Turnaround Management	Level 5	
	Process Safety Management Framework Development and Implementation	Level 5	
	Project Management	Level 6	
	Reliability Engineering Management	Level 6	
	Robotic and Automation Technology Application	Level 6	
	Technical Presentation	Level 6	
	Technology Road Mapping	Level 6	
Workplace Safety and Health Framework Development and Implementation	Level 5		
Programme Listing	For a list of Training Programmes available for the Energy and Chemicals sector, please visit: www.skillsfuture.sg/skills-framework/energyandchemicals		

The information contained in this document serves as a guide.