SKILLS FRAMEWORK FOR ENERGY AND CHEMICALS
SKILLS MAP - PROCESS ENGINEER

Sector	**Energy and Chemicals**
Track	**Production and Process Engineering**
Occupation	**Engineer**
Job Role	**Process Engineer**
Job Role Description	The Process Engineer provides technical support on process control and automation to optimise process capability, efficiency, yield and quality, in compliance with the organisation's Workplace Safety and Health (WSH), Environmental Management System (EMS) and Process Safety Management (PSM) system requirements. He/She works closely with the process safety engineering team by providing process engineering input to ensure that plant safeguarding requirements are met. He may also specialise in process control, process optimisation or process engineering projects, depending on organisational needs. The Process Engineer supports the production department by conducting production trial runs and recommending improvements to Standard Operating Procedures (SOPs) and work methods for production areas or processes. He supports projects during plant commissioning and turnaround activities and troubleshoots issues arising from changes in process operations or new production plant projects. The Process Engineer works closely with the production team and other departments. He possesses strong analytical thinking and problem-solving skills, is a good team player and interacts effectively with others.

Critical Work Functions and Key Tasks	**Critical Work Functions**	**Key Tasks**
	Administer Workplace Safety and Health (WSH), Environmental Management Systems (EMS)	Comply with WSH and EMS systems
		Provide feedback to the Health, Safety and Environment (HSE) team on any non-conformance with WSH and EMS systems
		Support WSH and EMS incident investigations
	Administer Process Safety Management (PSM) systems	Provide process engineering input to ensure plant safeguarding requirements are met
	Support process plant optimisation	Deliver process engineering projects or services, using established technologies for process optimisation
		Provide technical support on process control and automation to improve process capability, efficiency, yield and quality
		Support analyses of real-time plant data and vendor data and make recommendations for process efficiency improvements
	Perform process engineering support	Conduct production trial runs for new raw materials introduction and/or new product specifications
		Determine product specifications, in collaboration with relevant stakeholders, to meet customers' requirements and standards
		Recommend changes and improvements to Standard Operating Procedures (SOPs) and work methods for specific production areas and/or processes
		Support non-conformance investigations and advise on mitigation measures
	Manage process engineering projects	Provide technical justification bases for projects
		Support projects during plant commissioning and turnaround activities
		Support troubleshooting activities arising from changes in process operations or new production plant projects
		Use interactive digital modelling for process engineering solutions with reference to case studies and standards
	Manage asset integrity	Support asset integrity assurance and compliance
		Support asset integrity risk and reliability analyses and improvement activities
	Administer staff and organisational development	Adopt technologies to support virtual collaboration in remote locations
		Support continuous improvement, including pipeline reviews, and equipment and system performance and limits

Skills & Competencies	**Technical Skills and Competencies**		**Generic Skills and Competencies (Top 5)**	
	Change Management	Level 4	Sense Making	Intermediate
	Commissioning and Start-Up Management	Level 3	Computational Thinking	Intermediate
	Continuing Professional Development Management	Level 4	Problem Solving	Intermediate
	Continuous Improvement Management	Level 3	Communication	Intermediate
	Data Analytics System Design	Level 3	Interpersonal Skills	Intermediate
	Data and Statistical Analytics	Level 3		
	Engineering Drawing Interpretation and Management	Level 4		
	Engineering Management of Change	Level 3		
	Engineering Project Management	Level 3		
	Environmental Management System Framework Development and Implementation	Level 3		
	Front-End Engineering Design Management	Level 3		

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Skills & Competencies	Incident Investigation Management	Level 3	
	Internet of Things Management	Level 3	
	Major Hazard Installation Safety Case Management	Level 3	
	Non-Conformance Management	Level 4	
	Operations Reporting Protocol Application	Level 4	
	Process Control	Level 3	
	Process Development Management	Level 4	
	Process Engineering Design	Level 4	
	Process Operations Troubleshooting	Level 4	
	Process Optimisation	Level 4	
	Process Plant and Equipment Integrity Management	Level 4	
	Process Safety Management Framework Development and Implementation	Level 4	
	Process Unit and Utilities Operations Management	Level 4	
	Project Management	Level 4	
	Robotic and Automation Technology Application	Level 3	
	Safety Integrity Levels Management	Level 3	
	Standard Operating Procedures Development and Implementation	Level 4	
	Technical Presentation	Level 4	
	Technical Report Writing	Level 4	
	Workplace Safety and Health Framework Development and Implementation	Level 3	
	Workplace Safety and Health Hazard Identification and Risk Control Management	Level 3	
	Yield Analysis	Level 3	
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.

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