

**SKILLS FRAMEWORK FOR ENERGY AND CHEMICALS  
SKILLS MAP - PROCESS SAFETY ENGINEER**

<b>Sector</b>	<b>Energy and Chemicals</b>			
<b>Track</b>	<b>Production and Process Engineering</b>			
<b>Occupation</b>	<b>Engineer</b>			
<b>Job Role</b>	<b>Process Safety Engineer</b>			
<b>Job Role Description</b>	The Process Safety Engineer provides process safety and risk assessment support to plants. He/She is responsible for implementing the Process Safety Management (PSM) framework for hazard identification, assessment of consequences and control of risks, in compliance with existing PSM regulations, international codes and recommended practices. He uses tracking tools to track PSM performance data and contributes to the development and maintenance of the technical section of the organisation's Major Hazard Installation (MHI) Safety Case.			
	The Process Safety Engineer conducts process safety reviews and safety-related studies and analyses for existing and new facilities. He participates in process safety incident investigations and follows up on preventive and corrective actions. In addition, he supports asset integrity assurance and compliance and contributes to process safety-related continuous improvement projects.			
	The Process Safety Engineer works closely with the process engineering team and Health, Safety and Environment (HSE) department, and liaises with regulatory authorities for process safety matters. He is a team player with good communication, analytical and problem-solving skills.			
<b>Critical Work Functions and Key Tasks</b>	<b>Critical Work Functions</b>		<b>Key Tasks</b>	
	Administer Workplace Safety and Health (WSH) and Environmental Management Systems (EMS)		Comply with WSH and EMS systems	
			Participate in process safety incident investigations and follow up on preventive and corrective actions	
			Support the development and improvement of Safe System of Work (SSoW) frameworks	
	Administer Process Safety Management (PSM) systems		Implement and maintain PSM frameworks for hazard identification, assessment of consequences and control of risks	
			Support the development and maintenance of the technical section of the organisation's Major Hazard Installation (MHI) Safety Case	
			Prepare PSM performance data using tracking tools	
			Upkeep plant safeguarding systems to ensure compliance with process safety standards	
	Support process engineering projects		Provide technical justification bases for projects from the process safety perspective	
			Provide technical support on process troubleshooting and optimisation from the process safety perspective	
			Support projects during plant commissioning and turnaround activities	
			Use emerging technologies for process safety solutioning with reference to case studies and safety 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		
		Contribute to process safety-related continuous improvement projects		
<b>Skills &amp; Competencies</b>	<b>Technical Skills and Competencies</b>		<b>Generic Skills and Competencies (Top 5)</b>	
	Change Management	Level 4	Sense Making	Advanced
	Commissioning and Start-Up Management	Level 3	Computational Thinking	Advanced
	Continuing Professional Development Management	Level 4	Problem Solving	Intermediate
	Continuous Improvement Management	Level 3	Transdisciplinary Thinking	Intermediate
	Data Analytics System Design	Level 3	Lifelong Learning	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		
	Engineering Safety Standards Interpretation	Level 3		
	Environmental Management System Framework Development and Implementation	Level 3		
	Front-End Engineering Design Management	Level 3		
	Internet of Things Management	Level 3		
	Major Hazard Installation Safety Case Management	Level 5		
	Operations Reporting Protocol Application	Level 4		
	Process Control	Level 3		
	Process Engineering Design	Level 4		
	Process Operations Troubleshooting	Level 4		
	Process Optimisation	Level 4		
Process Plant and Equipment Integrity Management	Level 4			

<b>Skills &amp; Competencies</b>	Process Safety Management Framework Development and Implementation	Level 4	
	Robotic and Automation Technology Application	Level 3	
	Safe System of Work Development and Implementation	Level 4	
	Safety Integrity Levels Management	Level 3	
	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	
<b>Programme Listing</b>	For a list of Training Programmes available for the Energy and Chemicals sector, please visit: <a href="http://www.skillsfuture.sg/skills-framework/energyandchemicals">www.skillsfuture.sg/skills-framework/energyandchemicals</a>		

The information contained in this document serves as a guide.