

<b>SKILLS FRAMEWORK FOR ENGINEERING SERVICES</b>					
<b>SKILLS MAP – PRINCIPAL ENGINEER/MANAGER (OPERATIONS AND MAINTENANCE)</b>					
<b>Sector</b>	Engineering Services				
<b>Track</b>	Operations and Maintenance				
<b>Occupation</b>	Engineering Professional				
<b>Job Role</b>	<b>Principal Engineer/Manager (Operations and Maintenance)</b>				
<b>Job Role Description</b>	<p>The Principal Engineer/Manager (Operations and Maintenance) is responsible for acting as a technical advisor to provide problem-solving consultations and engineering expertise for engineering projects. He/She maintains oversight on all operations and maintenance plans and schedules and ensures alignment to organisational strategy. He reviews the organisational policies to ensure compliance to statutory and regulatory policies, procedures and regulations. He manages emergency response procedures and ensures adherence to workplace safety and health (WSH) requirements. He manages a team of senior engineers and ensures efficient business operations.</p> <p>He interacts proactively with various stakeholders and takes lead when resolving issues, and is able to communicate information in a clear and concise manner. He possesses strong analytical, problem-solving, trans-disciplinary and decision-making skills. He is also expected to travel occasionally to project locations.</p>				
<b>Critical Work Functions and Key Tasks / Performance Expectations</b>	<b>Critical Work Functions</b>	<b>Key Tasks</b>	<b>Performance Expectations* (For legislated / regulated occupations)</b>		
			Maintain equipment and systems	Optimise maintenance plans and schedules for inspection, testing, repair and predictive maintenance of equipment and systems to minimise downtime and costs	In accordance with: <ul style="list-style-type: none"> <li>• Professional Engineers Act and Rules;</li> <li>• Workplace Safety and Health (WSH) Act;</li> <li>• Building Control Act;</li> <li>• Electricity Act;</li> <li>• Fire Safety Act</li> </ul>
				Facilitate cross-departmental collaborations on maintenance and repair activities	
				Approve recommended repair works for major equipment and system failures	
				Evaluate root cause analysis reports of equipment and system failure, and develop potential solutions	
				Provide technical guidance on equipment and systems maintenance for equipment and systems	
				Develop financial and budgetary requirements of maintenance plans to organisational strategies	

	Conduct operations	Lead cross-department integration on operations	
		Endorse resourcing requirements to achieve operational state in accordance with organisational standards	
		Review and approve operational plans and Standard Operating Procedures (SOPs)	
		Provide technical guidance on operations of equipment and systems for equipment and systems	
		Evaluate root cause analysis reports of equipment and system underperformance, and develop potential solutions	
		Develop financial and budgetary requirements of operational plans to organisational strategies	
	Manage responses to emergencies and crises	Facilitate responses to crisis situations and recovery activities, in accordance with the crisis management framework and procedures	
		Lead emergency responses as a Site Incident Controller	
	Manage health, safety and environment	Establish departmental plans to align with organisational strategies and frameworks to drive compliance with Workplace Safety and Health (WSH) policies and Environmental Management Systems (EMS)	
		Drive contractor and vendor compliance with the organisational WSH and EMS standards and practices	
		Review WSH and EMS accident and incident findings and trends to recommend improvements	
		Drive sustainable engineering strategies, procedures and guidelines	
	Manage people and organisational function	Develop strategies for resource planning and utilisation	
		Drive department performance to achieve organisational goals	
		Drive talent recruitment and development for the department in alignment with organisational strategy	

		Manage the department's financial inflow and outflow against allocated budgets and forecasts		
		Validate risk management plans and risk controls to ensure compliance with organisation's risk management framework		
		Manage continuous improvement and change management initiatives for time, cost and quality improvements		
<b>Skills &amp; Competencies</b>	<b>Technical Skills &amp; Competencies</b>		<b>Generic Skills &amp; Competencies (Top 5)</b>	
	Artificial Intelligence Application	Level 5	Problem Solving	Advanced
	Asset Management	Level 5	Communication	Advanced
	Budgeting	Level 4	Leadership	Advanced
	Building Information Modelling Application	Level 5	Decision Making	Advanced
	Business Performance Management	Level 4	Teamwork	Advanced
	Business Presentation Delivery	Level 4		
	Change Management	Level 4		
	Civil and Structural Engineering Management	Level 5		
	Condition-based Assets Monitoring Management	Level 5		
	Continuous Improvement Management	Level 4		
	Cost Management	Level 5		
	Data and Statistical Analytics	Level 4		
	Electrical Engineering Management	Level 4		
	Emergency Response Management	Level 4		
	Engineering Drawing Interpretation and Management	Level 5		
	Environmental Management System Framework Development and Implementation	Level 5		

\*Performance Expectations are non-exhaustive and subject to prevailing regulations

Equipment and Systems Repair	Level 5
Equipment and Systems Testing	Level 4
Facility Maintenance	Level 4
Geotechnical Engineering Management	Level 5
Hazards and Risk Identification and Management	Level 4
Instrumentation and Control Design Engineering Management	Level 4
Internet of Things Management	Level 4
Inventory Management	Level 5
Learning and Development	Level 4
Maintenance Scheduling	Level 5
Maintenance Strategy Management	Level 5
Manpower Planning	Level 4
Mechanical Engineering Management	Level 4
Organisational Resource Management	Level 5
Organisational Risk Management	Level 4
Preventive Maintenance	Level 5
Programme Management	Level 4
Project Risk Management	Level 4
Quality System Management	Level 4
Robotic and Automation Technology Application	Level 5
Staff Management	Level 4
Stakeholder Management	Level 4
Strategy Development	Level 4
Structural Testing	Level 4
Sustainable Engineering	Level 3
Technical Inspection	Level 4
Technical Writing	Level 4
Technology Application	Level 4
Third Party Management	Level 5

	Workplace Safety and Health Culture Development	Level 4	
	Workplace Safety and Health Framework Development and Implementation	Level 5	
<b>Programme Listing</b>	For a list of Training Programmes available for the Engineering Services sector, please visit: <a href="http://www.skillsfuture.sg/skills-framework/engineeringservices">www.skillsfuture.sg/skills-framework/engineeringservices</a>		

The information contained in this document serves as a guide.