

SKILLS FRAMEWORK FOR ENGINEERING SERVICES SKILLS MAP – PRINCIPAL ENGINEER/MANAGER (COMMISSIONING)				
Sector	Engineering Services			
Track	Engineering Construction and Commissioning			
Occupation	Engineering Professional			
Job Role	Principal Engineer/Manager (Commissioning)			
Job Role Description	<p>The Principal Engineer/Manager (Commissioning) acts as a technical advisor to provide problem-solving consultation and technical expertise for commissioning projects. He/She leads commissioning activities, while managing key metrics for cost, time, quality, risk, safety and environmental impact. He establishes strategic partnerships and collaborates with internal and external stakeholders to ensure that all equipment, components and systems are fully functional and in optimal operating condition. He leads compliance, safety and risk management in accordance with external regulations and organisational standards. He manages a team of senior engineers and ensures efficient business operations.</p> <p>He is a key resource person who advises senior management and technical groups on commissioning matters. He is highly analytical, enjoys solving challenging problems, and is able to lead others effectively. He possesses strong project management, transdisciplinary and risk-management skills. He works on-site and is expected to travel occasionally to project locations.</p>			
Critical Work Functions and Key Tasks / Performance Expectations	Critical Work Functions	Conduct commissioning planning	Key Tasks	Performance Expectations* (For legislated / regulated occupations)
			Solicit project owner approval on owner's project requirements (OPR) and success criteria for the project	
			Approve the commissioning scope, schedule and budget	
			Approve commissioning plans, communication protocols and resourcing plans	
			Approve commissioning requirements based on project specifications and regulatory requirements	
	Confirm functional test readiness to ensure smooth execution of the functional testing process			
	Commission equipment, systems and assemblies	Establish strategies and plans for review of engineering design submittals depending on project complexity		
Endorse commissioning meetings and site visits to drive pre-emptive risk				
			In accordance with: <ul style="list-style-type: none"> • Professional Engineers Act and Rules; • Workplace Safety and Health (WSH) Act; • Building Control Act; • Electricity Act; • Fire Safety Act 	

		identification and mitigation in engineering construction	
		Approve construction checklists to endorse handover from construction	
		Approve functional and technical test results for equipment, systems and assemblies that meet the predefined acceptance criteria for quality and reliability	
		Endorse surveys, inspections and tests conducted by vendors and external stakeholders	
		Provide expert technical guidance and oversight for the resolution of commissioning issues and system deficiencies	
	Conduct handover and initial start-up	Approve detailed commissioning reports documenting all commissioning activities and findings	
		Approve systemic solutions to be implemented prior to start-up based on pre-start-up safety review (PSSR) findings	
		Endorse hand-over of operational equipment, systems and assemblies to approved personnel	
		Drive effective orientation, demonstration and training for owners and operations and maintenance personnel	
		Lead ongoing commissioning support during initial start-up and ramp-up period	
	Manage health, safety and environment	Establish departmental plans aligned to organisational strategies and frameworks to drive compliance with Workplace Safety and Health (WSH) policies and Environmental Management Systems (EMS)	
		Drive contractors' and vendors' 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		
Skills & Competencies	Technical Skills & Competencies		Generic Skills & Competencies (Top 5)	
	Budgeting	Level 4	Decision Making	Advanced
	Building Information Modelling Application	Level 5	Problem Solving	Advanced
	Business Performance Management	Level 4	Communication	Advanced
	Business Presentation Delivery	Level 4	Teamwork	Advanced
	Change Management	Level 4	Service Orientation	Advanced
	Civil and Structural Engineering Management	Level 5		
	Commissioning and Start-Up Management	Level 5		
	Continuous Improvement Management	Level 4		
	Cost Management	Level 5		
	Data and Statistical Analytics	Level 4		
	Design for Safety	Level 3		
	Electrical Engineering Management	Level 4		
	Engineering Drawing Interpretation and Management	Level 5		
	Engineering Safety Standards Interpretation	Level 5		
Environmental Management System Framework Development and Implementation	Level 5			

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

	Equipment and Systems Testing	Level 4	
	Geotechnical Engineering Management	Level 5	
	Hazards and Risk Identification and Management	Level 4	
	Instrumentation and Control Design Engineering Management	Level 4	
	Learning and Development	Level 4	
	Manpower Planning	Level 4	
	Mechanical Engineering Management	Level 4	
	Organisational Resource Management	Level 5	
	Organisational Risk Management	Level 4	
	Programme Management	Level 4	
	Project Risk Management	Level 4	
	Quality System Management	Level 4	
	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	
Programme Listing	For a list of Training Programmes available for the Engineering Services sector, please visit: www.skillsfuture.sg/skills-framework/engineeringservices		

The information contained in this document serves as a guide.