

SKILLS FRAMEWORK FOR PRECISION ENGINEERING SKILLS MAP - SENIOR ENGINEER				
Sector	Precision Engineering			
Track	Technical and Engineering			
Occupation	Engineer			
Job Role	Senior Engineer			
Job Role Description	<p>The Senior Engineer provides design solutions for products and establishes product specifications to satisfy requirements and meet organisational goals. He/She is responsible for formulating mass production processes to ensure operations meet both internal and external parties' quality requirements, and evaluates processes to optimise production capabilities and reviews the technical environment to meet business needs.</p> <p>He leads in managing cross-functional teams in continuous improvement projects and assists in implementing process improvement projects.</p> <p>He possesses an analytical mind and leadership skills to steer the team to achieve the desired organisational outcomes.</p>			
Critical Work Functions and Key Tasks	Critical Work Functions	Key Tasks		Performance Expectations (For legislated / regulated occupations)
	Manufacture components and end products	Create designs for engineering products and processes		
		Evaluate material suitability for manufacturing and processes for improving characteristics		
		Analyse measurement requirements to determine need for metrology systems		
		Formulate suitable manufacturing processes to meet product requirements		
	Conform to management system requirements	Introduce quality improvements into engineering products and/or processes		
		Propose improvements to workplace safety and health within operations		
	Manage manufacturing process workflow	Design precision machinery to satisfy manufacturing requirements		
		Formulate manufacturing process improvements for quality enhancement and waste reduction		
		Develop integration plans to incorporate new technologies into manufacturing processes		
		Refine control performance of automated precision machines		
	Contribute to continuous improvement	Implement computer-integrated manufacturing processes		
		Formulate strategies for manufacturing process performance improvements		
		Lead cross-functional teams in continuous improvement projects		
	Influence organisational development and strategies	Collaborate with stakeholders in improvement activities to meet organisational goals		
		Analyse data to identify business insights		
		Establish strategies for the business function		
Skills & Competencies	Technical Skills and Competencies		Generic Skills and Competencies (Top Level 5)	
	Additive Manufacturing	Level 5	Teamwork	Intermediate
	Automated System Design	Level 5	Communication	Advanced
	Automation Process Control	Level 6	Problem Solving	Advanced
	Automation System Maintenance	Level 5	Interpersonal Skills	Advanced
	Change Management	Level 4	Leadership	Advanced
	Cleanliness and Contamination Control	Level 5		
	Continuous Process Improvement	Level 5		
	Cyber Risk Management	Level 4		
	Data Analytics System Design	Level 5		
	Data Synthesis	Level 5		
	Embedded System Integration	Level 5		
	Emergency Response Management	Level 2		
	Engineering Product Design	Level 5		
	Equipment Maintenance	Level 5		
	Failure Analysis	Level 5		
	Heat Treatment Processing	Level 5		
Internet of Things Management	Level 5			

	Material Joining	Level 4	
	Laser and Optics Application	Level 5	
	Lean Manufacturing	Level 5	
	Machining	Level 5	
	Manufacturing Process Management	Level 5	
	Manufacturing Technology	Level 4	
	Metal Forming	Level 5	
	Metal-based Additive Manufacturing	Level 5	
	Metallic Material Characterisation	Level 5	
	Metrology Management	Level 5	
	Networking	Level 5	
	New Product Introduction	Level 5	
	Organisational Analysis	Level 5	
	Polymeric Additive Manufacturing	Level 5	
	Polymeric Material Characterisation	Level 5	
	Precision Measurement	Level 5	
	Production Line Set-Up	Level 5	
	Project Management	Level 5	
	Quality Process Control	Level 4	
	Quality System Management	Level 5	
	Research and Development	Level 4	
	Surface Preparation and Protection	Level 4	
	User Experience Design	Level 3	
	User Interface Design	Level 3	
	Value Analysis	Level 5	
	Virtual Reality Application	Level 4	
	Vision Leadership	Level 5	
	Welding	Level 5	
	Workplace Safety and Health System Management	Level 5	
Programme Listing	For a list of Training Programmes available for the Precision Engineering sector, please visit: www.skillsfuture.sg/skills-framework/pe		