

SKILLS FRAMEWORK FOR PRECISION ENGINEERING SKILLS MAP - ASSISTANT ENGINEER/ASSOCIATE ENGINEER					
Sector	Precision Engineering				
Track	Technical and Engineering				
Occupation	Engineer				
Job Role	Assistant Engineer/Associate Engineer				
Job Role Description	<p>The Associate Engineer/Assistant Engineer adapts and applies engineering techniques to support the design, development and manufacture of machinery and components and/or machine repair and maintenance. He/She works closely with colleagues to generate mechanical and system designs, equipment prototyping and conduct tests and inspections, while complying with workplace safety and health and other regulatory requirements.</p> <p>His duties require him to work on the shop floor, and may be required to work on rotating shifts. He possesses good communication skills, teamwork and an analytical mind to perform his role and achieve the desired organisational outcomes.</p>				
Critical Work Functions and Key Tasks	Critical Work Functions	Manufacture components and end products	Key Tasks		Performance Expectations (For legislated / regulated occupations)
			Design manufacture and assembly processes to meet product requirements		
		Conduct tests to select suitable materials for required engineering applications			
		Verify conformance of component or product dimensions and finishing against requirement specifications			
		Assemble mechanical machines			
		Implement engineering activities and processes			
		Execute part programmes on computer numerical control (CNC) machines to produce components			
	Conform to management system requirements	Enforce compliance of safety and good manufacturing practices and processes in production areas			
		Conduct technical presentations			
	Manage manufacturing process workflow	Assist in designing and enhancing manufacturing processes and tools			
		Apply new technology and innovations in manufacturing processes			
		Design components for equipment building and automation of machinery			
		Apply sensors and robotic systems within automated manufacturing systems			
	Contribute to continuous improvement	Assist in implementation of improvement projects			
		Identify opportunities for continuous improvement projects			
		Perform evaluations and/or experiments			
	Collect data for analysis				
Influence organisational development and strategies	Support negotiations with customers to reconcile product requirements with manufacturing parameters and business needs				
	Support decision-making to resolve business problems				
Skills & Competencies	Technical Skills and Competencies		Generic Skills and Competencies (Top Level 5)		
	Additive Manufacturing	Level 3	Problem Solving	Basic	
	Augmented Reality Application	Level 3	Teamwork	Intermediate	
	Automated Operation Monitoring	Level 3	Communication	Intermediate	
	Automated System Design	Level 3	Digital Literacy	Intermediate	
	Automation Process Control	Level 4	Virtual Collaboration	Intermediate	
	Automation System Maintenance	Level 3			
	Change Management	Level 3			
	Cleanliness and Contamination Control	Level 3			
	Computer-aided Design	Level 3			
	Computer-aided Manufacturing	Level 3			
	Continuous Process Improvement	Level 3			
	Cutting	Level 3			
	Data Analytics System Design	Level 3			
	Data Synthesis	Level 3			

Embedded System Integration	Level 3
Emergency Response Management	Level 3
Engineering Product Design	Level 3
Equipment Maintenance	Level 4
Failure Analysis	Level 4
Geometric Dimensioning and Tolerancing	Level 3
Heat Treatment Processing	Level 4
Hydraulic Systems Management	Level 3
Injection Mould Design	Level 3
Internet of Things Management	Level 3
Jigs and Fixture Design	Level 3
Laser and Optics Application	Level 3
Lean Manufacturing	Level 4
Machining	Level 3
Manufacturing Process Management	Level 3
Manufacturing Technology	Level 3
Metallic Material Characterisation	Level 3
Material Joining	Level 3
Metrology Management	Level 3
Organisational Analysis	Level 4
Plastic Injection Moulding	Level 3
Pneumatic Systems Management	Level 3
Polymeric Material Characterisation	Level 3
Precision Measurement	Level 3
Product and Machine Assembly	Level 3
Production Line Set-Up	Level 3
Project Management	Level 3
Quality Process Control	Level 3
Quality System Management	Level 4
Surface Preparation and Protection	Level 2
User Experience Design	Level 2
User Interface Design	Level 3
Virtual Reality Application	Level 4
Welding	Level 3
Workplace Safety and Health Practice	Level 3
Workplace Safety and Health System Management	Level 4
Programme Listing	For a list of Training Programmes available for the Precision Engineering sector, please visit: www.skillsfuture.sg/skills-framework/pe