

Skills Framework for Precision Engineering

Programmes that broaden or deepen specific skills and knowledge
for the various occupations in the sector

Technical and Engineering

**Job Role:
Engineer**

Full Qualification Programme	Provider
Bachelor of Engineering (Mechanical Engineering) - Part-time	Nanyang Technological University
Graduate Certificate in Precision and Advanced Manufacturing	
Specialist Certificate in Manufacturing Engineering	
Specialist Diploma in Precision Engineering	Nanyang Polytechnic
Specialist Diploma in Digital Manufacturing	

Technical Skills and Competencies (TSC)			Modular Programmes	Providers
Category	Title	Proficiency Level		
Automation Management	Automated System Design	Level 5	WSQ Apply Industrial Robots and Automation (SF)	Singapore Institute of Manufacturing Technology
	Automation Process Control	Level 5	WSQ Enhance Control Performance of Precision Machines (SF)	Singapore Institute of Manufacturing Technology
Business and Organisational Management	Organisational Analysis	Level 5	WSQ Implement Action Plan Using OmniMethodology (SF)	Singapore Institute of Manufacturing Technology
			WSQ Improve Operations Action Plan using WSQ OmniMethodology (SF)	
WSQ Operations Management Innovation Lean Improvement Towards Excellence (OMNI-LITE) (SF)				
	Project Management	Level 4	WSQ Plan and Manage Project for Implementation	Singapore Institute of Manufacturing Technology
Engineering and Manufacturing Fundamentals	Computer-aided Manufacturing	Level 3	Geometric Dimensioning and Tolerancing	Nanyang Technological University
			Tolerance Stackup and Analysis in Mechanical Design	
	Geometric Dimensioning and Tolerancing	Level 4	Tolerance Stackup and Analysis in Mechanical Design	Nanyang Technological University
			WSQ Geometric Dimensioning & Tolerancing (SF)	Singapore Institute of Manufacturing Technology
Heat Treatment Processing	Level 4	WSQ Review Heat Treatment Process for Metals (SF)	Singapore Institute of Manufacturing Technology	
Manufacturing and Operations	Manufacturing Process Management	Level 5	WSQ Implement OEE for Productivity Improvement (SF)	Singapore Institute of Manufacturing Technology
			WSQ Improve Machining Productivity through Dynamics Analysis and Simulation Programme (SF)	
WSQ Manage Manufacturing Execution System (MES) (SF)				
	Precision Measurement	Level 4	WSQ Dimensional Measurements and Metrology (SF)	Singapore Institute of Manufacturing Technology
Precision Manufacturing Process	Additive Manufacturing	Level 4	Introduction to 3D Printing	Nanyang Technological University
	Cutting	Level 4	WSQ Introduce High Speed Machining and Cutting Tools	Singapore Institute of Manufacturing Technology
	Laser and Optics Application	Level 4	Implement Optical Metrology	Nanyang Technological University
	Material Joining	Level 3	WSQ Apply Advanced Joining Technologies (SF)	Singapore Institute of Manufacturing Technology
			WSQ Understand the Microfluidics Manufacturing Processes	
	Metal Forming	Level 4	WSQ Employ Advanced Metal Forming and Casting Technologies (SF)	Singapore Institute of Manufacturing Technology
	Metal-based Additive Manufacturing	Level 4	Introduction to 3D Printing	Nanyang Technological University
			WSQ Review Powder-bed additive manufacturing processes for complex functional metallic components	Singapore Institute of Manufacturing Technology
Plastic Injection Moulding	Level 5	WSQ Understand the Microfluidics Manufacturing Processes	Singapore Institute of Manufacturing Technology	
Polymeric Additive Manufacturing	Level 4	Introduction to 3D Printing	Nanyang Technological University	

	Surface Preparation and Protection	Level 3	WSQ Apply Surface and Coating Technologies (SF)	Singapore Institute of Manufacturing Technology
			WSQ Implement Fundamentals of Corrosion and Corrosion Prevention (SF)	
	Welding	Level 4	WSQ Design Arc Welding (SF)	Singapore Institute of Manufacturing Technology
Quality Management	Failure Analysis	Level 4	Failure Analysis and Prevention for Engineering Materials, Structures and Device	Nanyang Technological University
	Quality System Management	Level 4	WSQ Manage Quality Systems and Processes	AVANTA Global Pte. Ltd.
Value Engineering	Lean Manufacturing	Level 4	WSQ Implement LEAN Manufacturing (SF)	Singapore Institute of Manufacturing Technology
Workplace Safety and Health Management	Emergency Response Management	Level 4	Process Safety Series Workshops	Singapore Institute of Technology
	Workplace Safety and Health Practice	Level 5	Process Safety Series Workshops	Singapore Institute of Technology

For Generic Skills and Competencies (GSCs) programme listing, please refer to *Section (v) (c) - View the Training Programmes for GSCs*. Or click this [link](#) to view the GSCs Programme Listing.