

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

Occupation: Manufacturing/Production/Operations Manager

Occupation Description:

The Manufacturing/Production/Operations Manager oversees the entire manufacturing process, to ensure that production goals are on schedule and budget. This includes determining Workplace Safety and Health strategies, and overseeing manpower, financial and resource plans within the division.

He/She analyses production data and determines new strategies to enhance the efficiency of processes, which includes assessing the viability of new machinery.

As a people manager, the Manufacturing/Production/Operations Manager directs and motivates teams to achieve production goals, and collaborates with other divisions or sections within the organisation.

Important Points to Note about this Document

This document is intended purely to provide general information to enable individuals, employers and training providers to be informed about the skills for career, training and education purposes. SkillsFuture Singapore Agency provides no warranty whatsoever about the contents of this document, and does not warrant that the courses of action mentioned in this document will secure employment, promotion, or monetary benefits. WDA will not be liable for any loss, damage or expense that individuals may incur as a result of reliance on the contents of this document.

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The skills expected of the Manufacturing/Production/Operations Manager are summarised as below:

Skill Category	Skill Sub-Category	Skills
Operations Planning		PRE-OPL-6008-1 Evaluate Competitive Systems and Practices within the Organisation
		PRE-OPL-6009-1 Review Manufacturing Processes for New Products
Operations Production		PRE-TEF-5028-1 Evaluate Operational Performance using 'OMNI' Methodology
		PRE-OPR-6006-1 Review and Analyse Production Trials and Specify Re-trials
Product Management		BM-SM-501E-1 Direct Market Research
		BM-SM-403E-1 Analyse Customer Behaviour
		BM-SM-404E-1 Analyse Competitors
		PRE-PMN-6001-1 Manage Product Pricing
		SVCF-IR-401C-1 Analyse Service Quality and Customer Satisfaction
		BM-SM-402E-1 Interpret Market Trends and Developments
		SVCF-SI-402C-1 Develop New Products and Services
		PRE-PMN-6002-1 Manage Product Design and Development
Sustainable Manufacturing		PRE-SMN-6004-1 Monitor and Analyse Energy Usage Patterns for Improvements
		PRE-SMN-6005-1 Analyse Organisation's Carbon Footprint
Maintenance		PRE-MAI-6009-1 Evaluate Maintenance Strategies and Systems
Value Analysis		PRE-VEN-6002-1 Evaluate Organisation's Value Stream to Reduce Waste

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Skill Category	Skill Sub-Category	Skills	
Manufacturing Productivity and Innovation		PRE-MPI-6022-1	Evaluate Organisation's Approach to Lean Enterprise to Enhance Competitiveness
		PRE-MPI-6024-1	Review Innovation Practices to Enhance Business Competitiveness
		PRE-MPI-6025-1	Facilitate Innovation Processes in the Organisation
		PRE-MPI-6026-1	Improve Productivity through RFID-enabled Workflows Innovation (RWI) Framework
Supply Chain and Logistics Management		PRE-SCL-6006-1	Evaluate the Performance of Manufacturing and Supply Chain Management
Quality Management Systems		PRE-QMS-6003-1	Evaluate the Effectiveness of Quality Management System
Workplace Safety and Health		PRE-WSH-6010-1	Evaluate Workplace Safety and Health Systems for Improvement
Business Analytics		PRE-BAN-6005-1	Analyse Data and Identify Business Insights
Business Negotiation		BM-BN-502E-1	Manage Dispute Mediation
Business Continuity Management		BM-BCM-501E-1	Develop and Maintain Business Continuity Strategies, Policies and Guidelines
Change Management		BM-CM-501E-1	Direct End-to-End Change Management
Communication		BM-COM-505E-1	Resolve Conflicts with Stakeholders

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Skill Category	Skill Sub-Category	Skills	
Finance		BM-FIN-503E-1	Develop and Establish Financial Budget and Plans
Human Resource Management		PRE-HRM-6006-1	Conduct Interviews and Make Hiring Decisions
		PRE-HRM-5004-1	Develop Workplace Learning Plans
		PRE-HRM-5003-1	Develop On-the-Job Training Programmes
		PRE-HRM-6007-1	Resolve Grievances and Disputes
Info-Communication Technologies		PRE-ICT-5002-1	Produce Advanced Spreadsheet Outputs using Spreadsheet Applications
Leadership and People Management		LPM-VIS-501C-0	Lead Managers to Develop Organisational and Governance Strategies
		LPM-RLT-501C-0	Foster Business Relationships and Organisational Diversity
		LPM-PER-501C-0	Develop Self to Maintain Professional Competence at Senior Management Level
Project Management		PRE-PMA-6001-1	Plan, Manage and Control Projects
		BM-PM-504E-1	Review and Endorse Project Plans and Deliverables
Risk Management		BM-RM-503E-1	Develop a Risk Management Framework, Policy and Process
		BM-RM-509E-1	Manage Risk across Business Units
Sales and Marketing		BM-SM-502E-1	Develop Domestic Sales and Marketing Operational Plans
		BM-SM-503E-1	Develop International Sales and Marketing Operational Plans

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Skill Category	Skill Sub-Category	Skills	
		BM-SM-504E-1	Evaluate Sales and Marketing Outcomes
Strategy Planning and Implementation		BM-SPI-501E-1	Develop Organisational Strategies and Policies
		BM-SPI-509E-1	Establish Business Strategies for the Business Function

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Skill Code	PRE-OPL-6008-1	Skill Category	Operations Planning
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Evaluate Competitive Systems and Practices within the Organisation		
Skill Description	This skill describes the ability to evaluate competitive systems and practices in an organisation which includes assessing its effectiveness in meeting organisation requirements. It also includes the impact on the value stream and other critical competitive systems and practices in the organisation.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Key parameters for implementation plan • Organisation strategic directions • Business planning methods and types of plans • Contingency planning and other risk mitigating planning tools • Organisation's value stream • Analysis of value stream • Application of quality principles 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Determine purpose of evaluation of competitive systems • Determine key performance indicators for the evaluation of competitive systems • Evaluate the effectiveness of the competitive systems using appropriate techniques and criteria • Monitor the effectiveness of the corrective action plan to address the gaps identified 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or</i>	<p>The ability to:</p> <p>Generate ideas to address the gaps in the organisation's competitive systems</p> <ul style="list-style-type: none"> • Develop a corrective action plan to address the gaps identified 		

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<i>enhance business values that are aligned to organisational</i>	
Social Intelligence and Ethics <i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i>	The ability to: <ul style="list-style-type: none"> • Negotiate with stakeholders over implications on objectives and strategies • Validate correction action plan with key stakeholders to seek endorsement
Learning to Learn <i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i>	N/A
Range of Application (where applicable) <i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i>	<p>Key parameters of a business plan must include:</p> <ul style="list-style-type: none"> • Scope • Period • Objectives in terms of customer benefit • Relationship to overall organisation objectives • Targets • KPIs • Implementation strategy • Risk management • Monitoring and adjustment strategy • Approval process <p>Value stream begins with the customer and includes all actions (both value-adding and non-value added) by internal sections or departments and external organisations to meet a customer's requirement. It must include:</p> <ul style="list-style-type: none"> • Sales outlet or representative

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	<ul style="list-style-type: none">• Information gathering, data analysis and research• Product design• Raw material sourcing• Intermediate processing• Final assembler or collation or preparation• Support services (e.g. accounting, finance and legal)• Storage and delivery to customer• After market support
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Skill Code	PRE-OPL-6009-1	Skill Category	Operations Planning
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Review Manufacturing Processes for New Products		
Skill Description	This skill describes the ability to recognise the key drivers for process selection and apply basic principles to the solution of shape or property or cost problems, and understanding its influence on the engineering properties of different processes. It also includes appreciating the application capabilities and limitation of primary and secondary manufacturing processes.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Design for Manufacture and Assembly (DFMA) tools and exercises • Generic needs for selecting processes • Selecting processes using Ashby diagrams • CES software and generic outputs • Manufacturing process selection using CES software • Types of rapid prototyping process • Principles of rapid near net shape manufacturing processes, including rapid tooling and additive layer manufacturing • Polymeric materials and processing • Joining processes • Methods of metal forming, including sheet metal forming and super-plastic forming • Casting technologies 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Identify key drivers for process selection and apply basic principles to the solution of shape or property or cost problems • Report the properties of materials which influence their selection and behaviour during processing 		
Innovation and	The ability to:		

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<p>Value Creation</p> <p><i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to organisational</i></p>	<ul style="list-style-type: none"> • Evaluate the influence on engineering properties of different processes • Review the capabilities and limitations of manufacturing processes
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>N/A</p>
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>N/A</p>
<p>Range of Application</p> <p>(where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>DFMA must include:</p> <ul style="list-style-type: none"> • The combination of two methodologies: Design for Manufacture and Design for Assembly

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Skill Code	PRE-TEF-5028-1	Skill Category	Operations Planning
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Evaluate Operational Performance using 'OMNI' Methodology		
Skill Description	This skill describes the ability to generate initiatives and action plans using the Operations Management Innovation (OMNI) methodology for operations improvement. It also includes mapping out the organisation's key activities and generating key improvement ideas aligned to them.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Operations Management Innovation (OMNI) methodology and its use in operations improvement • Objectives, inputs and outputs of each stage of the OMNI methodology • Fundamental concepts of operations improvement and its linkage with productivity • Characteristics and differences of three competitive strategies and its impact on an organisation's core competencies • Importance of aligning operations improvements to an organisation's competitive strategy • Types of performance measures based on defined business objectives • Concept of productivity, types of productivity measures and its uses • Tools and techniques used for operations improvement 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Confirm objectives of operations improvement • Determine organisation's competitive position and strategy • Identify the organisation's competitive strategy using OMNI methodology • Identify the organisation's products, customers and competitors • Determine linkages between activities in each division or department and the organisation's business objectives • Calculate and assess current productivity levels based on the productivity indices in the OMNI methodology 		
Innovation and Value Creation	<p>The ability to:</p> <ul style="list-style-type: none"> • Analyse gaps in the organisation's existing business activities in 		

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<p><i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to organisational</i></p>	<p>relation to its competitive strategy, service levels to customers and competitors' capabilities</p> <ul style="list-style-type: none"> • Propose measures to address the organisation's gaps • Facilitate the identification of key current activities for operations improvement using the organisation's defined business objectives • Facilitate the generation and prioritisation of key improvement areas that is mapped to identified business objectives and departments
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Facilitate sessions with relevant stakeholders to solicit information • Ensure a common understanding amongst key stakeholders in mapping out the actions of the organisation's key activities
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Maintain one's currency and awareness of new measures and techniques through diverse learning platforms to assess its suitability to the organisation
<p>Range of Application</p> <p>(where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>Areas for operations improvement must include:</p> <ul style="list-style-type: none"> • Enterprise level – this can be at a local level or global level • Department or Division level – this also can be a local department or a division that covers many different locations of the company • Cost centre or product unit level – this can be done for a particular product line, whether local or across multiple locations • Sub-department level – includes work centres and assembly lines

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Skill Code	PRE-OPR-6006-1	Skill Category	Operations Planning
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Review and Analyse Production Trials and Specify Re-trials		
Skill Description	This skill describes the ability to review trial results to achieve requisite product quality and production requirements. It also includes specifying the need for re-trials where needed to ensure adherence to product requirements.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Product specifications and production requirements • Trial objectives and results • Re-trial objectives and results • Criteria for analysing trial and re-trial results 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Confirm trial objectives as a basis for comparison • Review trial product quality results and compare with trial objectives to identify variations • Specify re-trial objectives and priorities to procedures • Carry out re-trial variations to achieve trial objectives • Record trial results to procedures 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Analyse trial results to establish priorities for the correction of parameters which are outside specifications • Recommend changes to achieve product quality and production requirements • Make changes to procedures to achieve the required product quality and production requirements 		

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<i>values that are aligned to organisational</i>	
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Oversee team’s performance during production trial to assess performance
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one’s self within and outside of one’s area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Critically examine one’s management of the production trial to reflect on strengths and weaknesses
<p>Range of Application</p> <p>(where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	N/A

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Skill Code	BM-SM-501E-1	Skill Category	Sales and Marketing
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Direct Market Research		
Skill Description	This skill describes the ability to direct market research. It also includes developing and reviewing market research policies and procedures, selecting and managing research consultants, guiding market research activities as well as evaluating research findings for strategy development and business planning.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Organisational research needs • Applications of research methodologies and sampling techniques • Types of market research relevant to business planning • Objectives of business plan 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Develop market research policies and procedures to guide market research plans • Select and manage external consultants to conduct market research activities • Guide market research activities to meet market research study objectives • Evaluate research findings to incorporate them into strategy development and business planning 		

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<p>Innovation and Value Creation</p> <p><i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to organisational goals.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Review market research policies and procedures to identify areas for improvement to maintain currency and research efficiency
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Demonstrate empathy and openness to discussion when working with external consultants to maintain positive working relationships
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Keep abreast of market trends and developments by subscribing to diverse information channels to identify potential market researches to undertake for business planning
<p>Range of Application</p> <p><i>(where applicable)</i></p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>N/A</p>

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Skill Code	BM-SM-403E-1	Skill Category	Sales and Marketing
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Analyse Customer Behaviour		
Skill Description	This skill describes the ability to conduct customer behaviour analysis. It includes acquiring knowledge on products and services and specific markets, analysing trends and past performance to assess customer interest levels and needs, as well as recommending improvements to existing sales and marketing programmes.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Factors that impact customer behaviour • Steps in customer decision making process • Criteria in determining specific markets • Marketing metrics to measure effectiveness of past marketing communications, and the type of information that each measure communicates 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Acquire knowledge on products, services and specific markets to understand the organisation's value proposition • Analyse trends and past performance to assess customer interest levels and needs 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Recommend improvements to existing sales and marketing programmes based on assessment of customer interest levels to improve sales results 		

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<i>aligned to organisational</i>	
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Demonstrate openness to feedback and suggestions, when recommending improvements to existing sales and marketing programmes, to maintain positive working relationships
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Augment own knowledge on customer behaviour analysis by subscribing to diverse learning channels and discussion platforms to ensure continuous learning for workplace application
<p>Range of Application</p> <p>(where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	N/A

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Skill Code	BM-SM-404E-1	Skill Category	Sales and Marketing
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Analyse Competitors		
Skill Description	This skill describes the ability to conduct competitor analysis. It includes identifying competitors, gathering data and assessing competitors, as well as developing recommendations and reporting findings to management.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Objectives of competitor analysis • Sources of information • Means of identifying potential competitors and the likelihood of their entrance into the market • Components of competitor profiles • Impacts of market trends and developments on organisational and competitors' sales and marketing strategies 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Identify competitors, both current and potential, in accordance with chosen dimensions to facilitate competitor analysis • Gather data on competitors to assess their strengths and weaknesses • Assess competitors to determine their relative impact on the organisation • Report findings to management in accordance with organisational procedures to provide updates and information for decision-making 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Develop recommendations based on assessments to address business competition 		

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<i>values that are aligned to organisational</i>	
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Adhere to organisational code of conduct, values and ethics when conducting competitor analyses to ensure ethical gathering of information and information confidentiality
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Augment own knowledge on types of analytical tools for competitor analysis by subscribing to diverse learning channels to ensure continuous learning for workplace applications
<p>Range of Application (where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>Customer needs must include:</p> <ul style="list-style-type: none"> • Quality of products and services • Safety of products and services • Superior performance of products and services • Aesthetic appearance of products and services • Comfort of products and services • Durability of products and services • Perceived value of products and services <p>Dimensions to consider when grouping competitors may relate to competitors':</p> <ul style="list-style-type: none"> • Competitor type • Organisation size • Product and service quality, selection and features • Market share • Growth • Available capital and resources • Reliability • Pricing policies • Distribution coverage and channels

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	<ul style="list-style-type: none">• Sales force strategy• Marketing communication activities• Branding and reputation• Target market• Market positioning• Business networks• Leadership
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Skill Code	PRE-PMN-6001-1	Skill Category	Product Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Manage Product Pricing		
Skill Description	This skill describes the ability to monitor and evaluate the impact of internal and external factors on product pricing decisions, as well as implement, monitor and assess product pricing strategies.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Pricing objectives • Means of evaluating different types of product pricing strategies • Impact of product pricing strategies on marketing mix 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Understand market pricing conditions through evaluation of impact of factors on product prices • Monitor and assess factors that influence pricing decisions to determine pricing implications • Implement product pricing strategies in tandem with the other elements of the marketing mix • Monitor and assess the effectiveness of product pricing strategies against organisational sales and marketing strategies and objectives 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are</i>	N/A		

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<i>aligned to organisational</i>	
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	N/A
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	N/A
<p>Range of Application</p> <p>(where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	N/A

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Skill Code	SVCF-IR-401C-1	Skill Category	Information and Results
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Analyse Service Quality and Customer Satisfaction		
Skill Description	This skill describes the ability to analyse customer data to improve the organisation's level of service quality and customer satisfaction. It also includes analysing service quality and customer satisfaction results and implementing improvement plans to close gaps.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Components of service quality and customer satisfaction framework • Sources of service quality and customer satisfaction data • Types of service performance gaps • Methods to analyse service quality and customer satisfaction data • Methods for communicating findings and results to relevant stakeholders • Methods to close service performance gaps 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Analyse service challenges to ascertain patterns that may impact service quality and customer satisfaction • Analyse service quality and customer satisfaction data against organisation benchmarks and industry standards to ascertain service performance gaps • Implement improvement plans to close service performance gaps 		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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<p>Innovation and Value Creation</p> <p><i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to organisational goals.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Review customer data from multiple sources to identify root causes of service performance gaps and areas for service enhancements • Conduct process or job re-design to enhance the effectiveness and efficiency of service delivery
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Communicate findings and results to relevant stakeholders • Seek management’s endorsement on plans to improve service quality and customer satisfaction
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one’s self within and outside of one’s area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Build staff’s capability to deliver service in accordance with organisation’s service standards through a diverse range of formal and informal learning platforms • Engage in industry networks and platforms that will enhance own understanding and analysis of customer satisfaction

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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<p>Range of Application</p> <p><i>(where applicable)</i></p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>Service quality measurements must include:</p> <ul style="list-style-type: none"> • Service response time • Customer retention rate, volume of repeat orders • Service recovery rate and turnaround time • Mystery audits <p>SERVQUAL dimensions that should include:</p> <ul style="list-style-type: none"> • Tangibles • Reliability • Responsiveness • Assurance • Empathy <p>Customer satisfaction measurements must include:</p> <ul style="list-style-type: none"> • Customer satisfaction levels – number and/or frequency of customer complaints and/or compliments, intensity (subjective) of customer complaints • Customer equity • Customer assets • Perceived quality • Perceived reliability • Extent of customer needs fulfilled <p>A service quality and customer satisfaction framework must include:</p> <ul style="list-style-type: none"> • Service quality and customer satisfaction measurements • Data collection methods • Benchmarks to assess service quality and customer satisfaction through methods such as: <ul style="list-style-type: none"> ○ Internal benchmarking: comparing one function with that of another function ○ Competitive benchmarking: comparing with competitors who are considered best in class or world class ○ Functional benchmarking: comparing processes to companies with similar processes (could be outside the organisation’s industry) ○ Generic benchmarking: finding organisations with “best in class” (or “world class” if applicable) processes from which lessons could be learned and translated into the organisation
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**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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	<p>Frequency of monitoring service quality and customer satisfaction such as:</p> <ul style="list-style-type: none">• Monthly• Quarterly• Half yearly• Yearly <p>Source of service quality data must include:</p> <ul style="list-style-type: none">• Mystery audits• Customer relationship management systems <p>Sources of customer satisfaction data must include indices such as the CSISG (Customer Satisfaction Index of Singapore).</p> <p>Service performance gaps must include:</p> <ul style="list-style-type: none">• Gaps in customer expectations and actual product or service delivered• Gaps in expected service and actual service delivered• Customer service delivery deficiencies at particular organisation sites or within particular groups <p>Types of service performance gaps must include:</p> <ul style="list-style-type: none">• Quality gaps• Productivity gaps• Delivery gaps• Differences between customer expectations and perceptions of service
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**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

Skill Code	BM-SM-402E-1	Skill Category	Sales and Marketing
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Interpret Market Trends and Developments		
Skill Description	This skill describes the ability to interpret market trends and developments impacting organisational marketing activities. It also includes identifying, analysing and reporting market trends and developments as well as reporting findings and recommendations to management.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Sources of information for identification of market trends and developments • Potential opportunities and threats • Methods of evaluating business environment • Methods of displaying data • Considerations in displaying data • Methods of interpreting data 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Identify market trends and developments that may impact organisational marketing activities to guide market trends analysis • Report findings and recommendations to management in accordance with organisational procedures to ensure management team is updated and consulted 		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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<p>Innovation and Value Creation</p> <p><i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to organisational goals.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> Analyse market trends and developments to forecast emerging market needs and develop appropriate recommendations
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> Demonstrate empathy and openness to feedback when communicating findings and recommendations to management to seek inputs and support
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> Keep abreast of market trends and developments that may impact organisational marketing activities by subscribing to diverse information channels and participating in discussion platforms to enhance own knowledge for workplace application
<p>Range of Application</p> <p><i>(where applicable)</i></p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>N/A</p>

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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Skill Code	SVCF-SI-402C-1	Skill Category	Product Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop New Products and Services		
Skill Description	This skill describes the ability to develop new product or services to address customer needs and expectations. This includes planning, developing and implementing the newly developed product or service offering.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Customer needs and expectations • Data to assess customer's needs and expectations • Service design tools to innovate the organisation's product or service offerings • Criteria for evaluation of developed product and service offerings 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Assess customers' needs and expectations when developing new products and services • Evaluate developed products and service to ensure that it is in line with customer's needs and expectations 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Leverage on service design tools to innovate the organisation's product or service offerings 		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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<i>values that are aligned to organisational</i>	
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Solicit feedback from customers to ascertain customers' needs and expectations from the organisation's product or service offering
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Stay updated on market trends and new products and service offerings through industry events
<p>Range of Application (where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>Customer needs must include:</p> <ul style="list-style-type: none"> • Quality of products and services • Safety of products and services • Superior performance of products and services • Aesthetic appearance of products and services • Comfort of products and services • Durability of products and services • Perceived value of products and services <p>Customer expectations must include:</p> <ul style="list-style-type: none"> • Reliability • Responsiveness to customers' requests • Efficient and accurate service • Friendly and helpful service • Prompt response to enquiries • Empathy and support • Comfort <p>Service design tools to innovate the organisation's product and service</p>

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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	<p>offerings must include:</p> <ul style="list-style-type: none">• Service blueprints• Customer lifecycle maps• Touch points board• Design sketch boards• Stakeholder maps• Service safaris• Shadowing• Contextual interviews• The five 'whys'• Expectation maps• Storyboards• Service prototypes• Service staging• Co-creation• Storytelling
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**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
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Skill Code	PRE-PMN-6002-1	Skill Category	Product Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Manage Product Design and Development		
Skill Description	This skill describes the ability to manage product design, development and introduction as an integrated whole from ideas and concept stage to customer, and in service.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Process of product development • Management of effective design • Lean new product introduction • Relationship of tangible product and brand • Management of creativity • Process of concurrent engineering • Organisation for effective product design and development • Design protection and intellectual property rights • Tools, techniques and technologies including concept generation and selection • Design for assembly or manufacture lifecycle costing • Design to cost design validation • User or customer view about products • Introduction of innovative products • Workplace Safety and Health regulations 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Define the role of product design and development process in manufacturing industry • Define the components of product design and development processes and their relationship from concept to customer • Establish the design management process and effective customer satisfaction through innovation 		
Innovation and	The ability to:		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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<p>Value Creation</p> <p><i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to organisational</i></p>	<ul style="list-style-type: none"> • Evaluate using a methodical approach the management of product and development • Review the differentiating approach between the important methods, technologies, latest trends, tools and techniques of product design and development and their effective utilisation
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>N/A</p>
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>N/A</p>
<p>Range of Application (where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>Components of product design and development processes must include:</p> <ul style="list-style-type: none"> • Product design considerations • New product introduction process • Key activities in a design process • Product introduction process • Business evaluation for engineering components <p>Design management process and effective customer satisfaction through innovation must include:</p> <ul style="list-style-type: none"> • Traditional product management • Fragmented product propositions

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
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	<ul style="list-style-type: none">• Difficult to differentiate• No game changers• Biased view of the same market• Redundant activities and conflicting goals• Competition for resources• Portfolio product management• Goals of portfolio management• Benefits of portfolio management <p>Differentiating approach between important methods, technologies, latest trends, tools and techniques of product design and development and their effective utilisation must include:</p> <ul style="list-style-type: none">• Identification of costs• Business mode• Channels to market• CAD/CAM, Knowledge-based engineering• Configuration management• Design for X• Market segmentation• Puttick Grid• Porter's Five (5) Forces Model
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**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

Skill Code	PRE-SMN-6004-1	Skill Category	Sustainable Manufacturing
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Monitor and Analyse Energy Usage Patterns for Improvements		
Skill Description	This skill describes the ability to use energy usage pattern monitoring and analysis to improve energy efficiency and productivity using a set of software tools and methodologies. It also includes studying data mining methods for energy usage pattern identification, energy efficiency management, and energy consumption analysis in manufacturing processes such as machining, grinding, welding and injection moulding.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Fundamentals of energy efficiency (EE) • Energy consumption monitoring and analysis in machining process • Energy consumption monitoring and analysis in grinding process • Applying power signals monitoring for quality control in welding process • Energy usage pattern discovery and production mode identification • Energy efficiency monitoring and analysis system 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Define methodology for manufacturing energy efficiency management • Report and analyse energy consumption in machining process • Evaluate energy efficiency monitoring and analysis (E2MAS) system • Review production operation mode by using statistical analysis methods • Report energy usage patterns by data mining methods 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Evaluate the shortfalls in the organisation’s energy usage and determine corrective actions to address them 		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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<i>performance and/or enhance business values that are aligned to organisational</i>	
Social Intelligence and Ethics <i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i>	N/A
Learning to Learn <i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i>	N/A
Range of Application (where applicable) <i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i>	<p>Reporting and analysing energy consumption in machining process must include:</p> <ul style="list-style-type: none"> • Conventional machining process • Monitoring and analyse energy consumption in grinding process • Applying power signals monitoring for quality control in welding process • Real time energy usage profile pattern monitoring and analysis in manufacturing processes <p>Energy efficiency monitoring and analysis (E2MAS) system relating to:</p> <ul style="list-style-type: none"> • Evaluating E2MAS system • Case study of energy consumption analysis in polymer injection moulding processes • Pre-installing assessment of E2MAS • Installing E2MAS and collecting power signal data • Identifying energy usage pattern and operation mode using E2MAS

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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	<ul style="list-style-type: none">• Energy usage patterns by data mining methods <p>Reporting energy usage patterns by data mining methods must include:</p> <ul style="list-style-type: none">• Analysing energy efficiency and energy losses• Identifying areas for improvement• Automatic counting and updating of energy consumption status by time period, production operation mode, and job order• Energy efficiency benchmarking by machine, process, job order and per unit cost <p>Software and tools must include:</p> <ul style="list-style-type: none">• Energy efficiency monitoring and analysis system (E2MAS) system• Power meter• Data acquisition convertor• Computer and database
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**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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Skill Code	PRE-SMN-6005-1	Skill Category	Sustainable Manufacturing
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Analyse Organisation's Carbon Footprint		
Skill Description	This skill describes the ability to analyse the organisation's carbon footprint through the use of carbon footprint assessment tools. It also includes documenting the findings in accordance with international guidelines and principles.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Foundation context of carbon footprint assessment • Product's lifecycle and product configuration • Types of emissions sources • Scopes of carbon footprint • Carbon footprint assessment • Types of uncertainty factors • Carbon footprint of similar products in the industry • Types of operational and sourcing options • International guidelines and principles for carbon footprint assessment and documentation • Workplace Safety and Health regulations 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Define objectives, scope and planning for the carbon footprint assessment in accordance with a respective organisational requirements • Screen business facilities and operations to develop a process mapping in accordance to an actual product's lifecycle requirements • Define boundary conditions, assumptions and prioritisation for a product's lifecycle according to the international guidelines and principles • Construct a lifecycle inventory data based on the developed product's lifecycle boundary • Analyse data quality based on the lifecycle inventory data constructed • Use carbon footprint assessment software tools to assess carbon footprint of the product's lifecycle • Analyse the uncertainty factors based on carbon footprint assessment 		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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	<ul style="list-style-type: none"> • Evaluate carbon footprint performance of the selected product system boundary and benchmark within the industry • Document results and prepare the report according to the international guidelines and principles
<p>Innovation and Value Creation</p> <p><i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to organisational</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Determine emissions 'hot spots' and propose potential carbon footprint reduction approaches
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	N/A
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	N/A
<p>Range of Application</p> <p>(where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill</i></p>	N/A

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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<i>may be demonstrated.</i>	
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**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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Skill Code	PRE-MAI-6009-1	Skill Category	Maintenance
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Evaluate Maintenance Strategies and Systems		
Skill Description	This skill describes the ability to evaluate an organisation's maintenance strategy and systems in accordance with organisational policies and procedures. It also includes evaluating ideas for improvement and conducting systematic reviews to enhance the organisation's maintenance strategy.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Types of maintenance programmes and their benefits • Principles of how equipment functions, operation sequence, working purpose of individual units or components and how they interact • Procedures for purchasing or obtaining replacement parts, materials and other consumables necessary for maintenance activities • Method to determine resources needed for maintenance activities • Methods and parameters used to calculate duration of specific maintenance activities • Organisation's policies and procedures relating to repair or replacement of equipment or components during maintenance process • Organisation's policies and procedures relating to maintenance documentation and/or reports • Equipment operating and control procedures to be applied during maintenance activity • Organisational procedures relating to the safe disposal of waste of all types of materials • Procedures to be adopted for the dismantling or re-assembly of various types of assemblies • Procedure to create Standard Operating Procedures (SOPs) and co-relate work activities to them • Techniques required to communicate information using visual control systems • Hazards associated with manufacturing activities and methods to minimise them • Method to deal with changes to maintenance schedules • Method to complete and review risk assessments • Budgeting for maintenance programmes • 'Root cause' problem solving analysis 		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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	<ul style="list-style-type: none"> • Methods to evaluate improvement ideas • Workplace Safety and Health regulations
<p>Application and Adaptation</p> <p><i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Report and evaluate the impact of maintenance programmes and improvement activities
<p>Innovation and Value Creation</p> <p><i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to organisational</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Identify and lead on making improvements to maintenance processes and procedures • Review risk assessments associated with maintenance strategy and systems • Motivate the maintenance team to present their own ideas on improvement that may enhance the organisation's maintenance systems and processes
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Consult and seek endorsement from key stakeholders on improvements to maintenance processes and procedures
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Keep abreast of developments new technologies in maintenance strategies and systems through diverse learning platforms and industry networks

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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<i>within and outside of one's area of work.</i>	
<p>Range of Application (where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>Types of maintenance programmes must include:</p> <ul style="list-style-type: none"> • Preventive maintenance (routine inspections and adjustments) • Corrective maintenance (activities identified from preventive maintenance activities) • Predictive maintenance (analysis of equipment's condition) • Reactive maintenance (unexpected equipment / component failure) • Maintenance prevention (equipment/component design and development) <p>Hazards associated with carrying out maintenance activities must include:</p> <ul style="list-style-type: none"> • Handling oils, greases • Stored pressure or force • Misuse of tools • Using damaged or badly maintained tools and equipment <p>Techniques required to communicate information using visual control systems must include:</p> <ul style="list-style-type: none"> • Card systems • Colour coding • Floor footprints • Graphs and charts • Team boards • Tool or Equipment shadow boards <p>Improvements in the services provided by the maintenance team must include:</p> <ul style="list-style-type: none"> • Equipment downtime during maintenance • Equipment performance monitoring systems • Overall equipment effectiveness (OEE) • Maintenance procedures • Operator instructions • Visual management systems/documentation • Resource planning • Costs • Staff development and training

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

	<ul style="list-style-type: none">• Workplace Health and Safety• Procurement
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**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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Skill Code	PRE-VEN-6002-1	Skill Category	Value Analysis
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Evaluate Organisation's Value Stream to Reduce Waste		
Skill Description	This skill describes the ability to analyse and evaluate an organisation's value stream, including the clear identification of the place of an organisation in the value stream and its contribution to the value stream. It also includes the identification of an organisation in a value stream, their relationships and the activities undertaken by value stream organisations.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	The ability to understand: <ul style="list-style-type: none"> • Value stream mapping • Purpose of value stream analysis • Method to identify the organisation's place in the value stream • Flow of materials along value stream • Classification of steps and processes into value-adding and non-value-adding methods to measure value-add • Concept of waste and value in terms of customer benefit • Types of waste and methods of reducing it • Processes and operations used in own organisation to make products or deliver services to internal and external customers • Processes used by other members of the value stream 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	The ability to: <ul style="list-style-type: none"> • Map the organisation's value stream taking into account the organisation's ultimate supplier, ultimate customer, and all organisations between the ultimate supplier and ultimate customer • Determine the features obtained by the customers from the organisation's products or processes • Identify data sources to determine the measurement of contribution to features or benefits 		
Innovation and Value Creation <i>It refers to the ability</i>	The ability to: <ul style="list-style-type: none"> • Identify the benefits obtained by the customers from the organisation's products or processes 		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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<p><i>to generate purposive ideas to improve work performance and/or enhance business values that are aligned to organisational</i></p>	<ul style="list-style-type: none"> • Determine the value added to the organisation's products or processes by each internal step • Identify activities on value stream map which do not add to customer features or benefits
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Liaise with external value stream members to determine methods to reduce overall waste
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>N/A</p>
<p>Range of Application</p> <p>(where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>N/A</p>

SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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Skill Code	PRE-MPI-6022-1	Skill Category	Manufacturing Productivity and Innovation
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Evaluate Organisation's Approach to Lean Enterprise to Enhance Competitiveness		
Skill Description	This skill describes the ability to examine the principles, techniques, key tools of 'Lean' and how they might apply in a variety of processes and sectors. It also includes exploring the strategic importance of creating 'lean enterprise' as well as the challenges associated with achieving and sustaining this.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Evolution of 'Lean' • Framework for Lean Thinking • Creating 'lean' enterprise • Illustrations of 'lean' in different sectors • Principles and applications of Lean Six Sigma • 'Lean' audits • 'Lean' implementation and sustainability • Tools and techniques of 'lean' 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Identify a framework for Lean Thinking and the benefits a 'lean' approach can afford • Apply an approach to designing 'lean' enterprise • Identify, select and apply appropriately relevant tools and techniques to support 'lean' enterprise • Critically evaluate how Lean Thinking might apply in different sectors, processes and levels within the enterprise • Recommend an appropriate approach to implementing sustainable Lean Enterprise 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or</i>	N/A		

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<i>enhance business values that are aligned to organisational</i>	
Social Intelligence and Ethics <i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i>	N/A
Learning to Learn <i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i>	N/A
Range of Application (where applicable) <i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i>	<p>Framework for 'lean' and the benefits of lean approach must include:</p> <ul style="list-style-type: none"> • Introduction, 'lean' foundations and business priorities • 'Lean' simulation runs • Understanding customers' needs (Specifying value) • Principles of Scientific Management that were developed by F.W. Taylor • Henry Ford's approach in the development of the paced, moving assembly line • Toyota production system (Ohno '88) • Standardisation and interchangeability of parts • Total quality management system (TMS) • Total productive maintenance (TPM) system <p>Application of appropriate approach to designing lean enterprise must include:</p> <ul style="list-style-type: none"> • Underlying concepts: Muda, Mura and Muri • Identifying value and eliminating waste

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	<ul style="list-style-type: none">• Identifying the value stream• Mapping the current state• 'Lean' simulation• Concepts of Lean• Value stream mapping• Lean responses to customer needs• Process improvement• Lean Management <p>Recommending an appropriate approach to implementing sustainable Lean Enterprise must include:</p> <ul style="list-style-type: none">• Future state mapping• Lean in the extended enterprise• Preparing for implementation, 5S• Lean Management: Respect for humanity• Lean management: Hoshin planning• Development of a 'lean' culture• Toyota Kata
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**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
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Skill Code	PRE-MPI-6024-1	Skill Category	Manufacturing Productivity and Innovation
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Review Innovation Practices to Enhance Business Competitiveness		
Skill Description	This skill describes the ability to develop new skills and knowledge about innovation that will enhance and contribute to the long-term competitiveness of the business.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Individual and innovation strategy • Creation and usage of new tools to support innovation in all areas of the business • Development of personal innovation action plans • Conditions for innovation • Innovation and business strategy • International perspective about innovation 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Determine the relationship between innovation and competitive performance 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Create new tools to support innovation in all areas of the business • Monitor the use of new tools to support innovation in all areas of the business 		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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<i>aligned to organisational</i>	
Social Intelligence and Ethics <i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i>	N/A
Learning to Learn <i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i>	The ability to: <ul style="list-style-type: none"> • Complete the development of personal innovation action plans
Range of Application (where applicable) <i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i>	N/A

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Skill Code	PRE-MPI-6025-1	Skill Category	Manufacturing Productivity and Innovation
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Facilitate Innovation Processes in the Organisation		
Skill Description	This skill describes the ability to facilitate innovation process within the organisation to improve organisational performance. It includes establishing systems to support innovation, identifying, reviewing and implementing innovation initiatives and engaging employees for feedback on innovation.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Barriers to innovation that can occur within the organisation • Business environment issues and impacts to be considered in developing innovation concepts • Issues and requirements to commercialise innovation concepts • Broad practical and operational issues that determine whether an innovation initiative can be implemented • Considerations in generating and translating innovative ideas into workable concepts • Communication and facilitation methods for encouraging innovation within the organisation 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Establish systems to support innovation within the organisation in consultation with relevant stakeholders • Review pilot testing or prototyping results to determine feasibility of innovation initiatives across the organisation • Filter and select suitable innovation initiatives to translate to organisational levels • Present organisation-wide implementation specifications to management for approval • Provide opportunities for all employees to provide feedback and explore ideas and opportunities for change and innovation for further refinement 		
Innovation and Value Creation	<p>The ability to:</p> <ul style="list-style-type: none"> • Research and evaluate existing information to identify and evaluate 		

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<p><i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to organisational</i></p>	<p>needs and opportunities for innovation initiatives within organisation</p>
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Apply emotional intelligence to guide one’s communication to influence and persuade stakeholders to embrace change and innovation
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one’s self within and outside of one’s area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Engage in regular self-reflection to identify own areas for improvement in facilitating innovation process • Improve own innovation management capability by subscribing to diverse learning channels
<p>Range of Application</p> <p>(where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>N/A</p>

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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Skill Code	PRE-MPI-6026-1	Skill Category	Manufacturing Productivity and Innovation
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Improve Productivity through RFID-enabled Workflows Innovation (RWI) Framework		
Skill Description	This skill describes the ability to innovate existing workflows and improve productivity with the use of Radio Frequency Identification (RFID) technology. It also includes studying existing production workflows and identifying opportunities in improving business top line.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Fundamentals of Radio Frequency Identification (RFID) technology • RFID architecture • RFID standards • RFID applications • Workflow analysis • Productivity assessment • Cost benefits analysis 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Model and measure workflows using graphs in terms of throughput, processing time and other metrics • Create RFID solutions • Specify RFID system requirements • Compute the cost of RFID system implementation • Predict outcome of cost and benefits over relevant time period • Compute Returns-on-Investment and payback period • Specify details of pilot implementation phase and full-scale implementation 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Analyse 'as-is' workflows for inefficiency and wastage • Improve workflows by creating 'to-be' RFID-enabled workflows • Select productivity measurements and measure all cost/benefit elements • Fine-tune implementation plan for RFID based on feedback from pilot phases 		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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<i>values that are aligned to organisational</i>	
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Seek endorsement from key stakeholders on RFID implementation plan
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Keep abreast of new technology in RFID
<p>Range of Application</p> <p>(where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	N/A

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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Skill Code	PRE-SCL-6006-1	Skill Category	Supply Chain and Logistics Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Evaluate the Performance of Manufacturing and Supply Chain Management		
Skill Description	This skill describes the ability to evaluate the effectiveness of suppliers and focuses on the need to evaluate the supplier's performance against agreed criteria. It also includes proposing recommendations to improve suppliers' performance.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Analysis methods and procedures • Cost and benefit analysis methods and procedures • Database management and monitoring methods and procedures • Evaluation methods and procedures • Organisational procedures and policies relating to supply chain management 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Identify critical factors that affect suppliers and supply chain • Analyse risks and benefits, and resource implications of proposed improvements to supply chain 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Explore improvements to the supply chain which will enhance organisational effectiveness 		

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<i>values that are aligned to organisational</i>	
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Present findings and recommendations to stakeholders to seek endorsement
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Keep abreast of new supply chain management strategies or new supply networks through industry platforms to assess their suitability for the organisation
<p>Range of Application</p> <p>(where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	N/A

SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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Skill Code	PRE-QMS-6003-1	Skill Category	Quality Management Systems
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Evaluate the Effectiveness of Quality Management System		
Skill Description	This skill describes the ability to evaluate an organisation's quality management system with a view to proposing and implementing improvements. It also includes developing appropriate training programmes to address manpower gaps in executing quality management systems.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Quality management systems • Process improvement • Policy and procedure development • Method to identify training gaps • Method to develop competency framework • Data management and documentation • Workplace Safety and Health regulations 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Analyse roles and duties of personnel in executing the organisation's quality management systems • Identify training needs in relation to quality management systems • Develop competency framework to implement training programmes for quality management systems • Undertake regular audits of quality management system, its policies and procedures • Implement improvements to address gaps in quality management system 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Evaluate the quality management system to identify gaps 		

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<i>enhance business values that are aligned to organisational</i>	
Social Intelligence and Ethics <i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i>	The ability to: <ul style="list-style-type: none"> • Consult with the production team to seek feedback on organisation's quality management systems • Seek key stakeholders endorsement on proposed improvements to quality management system
Learning to Learn <i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i>	N/A
Range of Application (where applicable) <i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i>	N/A

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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Skill Code	PRE-WSH-6010-1	Skill Category	Workplace Safety and Health
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Evaluate Workplace Safety and Health Systems for Improvement		
Skill Description	This skill describes the ability to evaluate an organisation's Workplace Safety and Health (WSH) management system, identify areas for improvement, make the relevant recommendations and monitor the progress of improvement.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Areas of improvement to Workplace Safety and Health (WSH) Management System • Organisational needs for improvement • Consultation with stakeholders • Prioritisation of areas for improvement • Improvement recommendations • Levels of control • Legal and other requirements of WSH • Good practices in WSH • Resources needed for implementation of improvement recommendations • Benefits of recommended improvements • Setting of measurements for successful implementation • Implementation plan • Monitor and review of implementation progress • Resolving issues during implementation • Contextual or organisational changes • Verification of improvements' effectiveness • Reporting to stakeholders on improvement made • Workplace Safety and Health regulations 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Develop a proposal on areas of improvement in accordance with organisational needs • Monitor and review progress of implementation in accordance with implementation plan and organisational needs 		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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<i>ability to react to and manage the changes at work.</i>	
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to organisational</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Identify areas of improvement to the WSH Management System based on organisational needs for improvement
Social Intelligence and Ethics <i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Present improvement recommendations proposal to stakeholders in accordance with organisational procedures • Advise stakeholders on setting of measurements for successful implementation in accordance with the implementation plan
Learning to Learn <i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i>	N/A
Range of Application (where applicable) <i>It refers to the critical circumstances and contexts that the skill may be</i>	N/A

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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<i>demonstrated.</i>	
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**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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Skill Code	PRE-BAN-6005-1	Skill Category	Business Analytics
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Analyse Data and Identify Business Insights		
Skill Description	This skill describes the ability to analyse the different types of data to address the hypothesis and working with the stakeholders to identify business insights.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Statistical modelling techniques • Programming language and tools for big data analytics and how they integrate with big data technologies • Current and emerging trends in the business domain • Concepts of computing used in big data analytics • Understanding the meaning of the data in different data sources 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Review the hypothesis to address problem statement for the analytics project • Explore the data in the analytics platform or organisation to familiarise with the data available for analysis • Perform analysis on the data to prove or disprove the hypothesis and obtain business insights using the relevant programming language or tools for big data analytics tools • Develop a report of the business insights for the relevant parties 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Review financial analysis ratios to measure profitability, viability and resource utilisation of the business unit 		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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<i>aligned to organisational</i>	
Social Intelligence and Ethics <i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i>	N/A
Learning to Learn <i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i>	The ability to: <ul style="list-style-type: none"> • Keep abreast of current and emerging trends in the business domain through diverse learning platforms to continually revise one's assumptions in analysing data
Range of Application (where applicable) <i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i>	Tools for big data analytics may include: <ul style="list-style-type: none"> • Analytical tools (e.g. SAS, Google Analytics, IBM Netezza) • Statistical packages (e.g. SAS, SPSS) • Business intelligence (BI) reporting or analytical tools • R-based tools (e.g. RevoScaleR)

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Skill Code	BM-BN-502E-1	Skill Category	Business Negotiation
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Manage Dispute Mediation		
Skill Description	This skill describes the ability to manage dispute mediation to achieve mediation objectives. It also includes developing mediation guidelines, preparing and participating in mediation and evaluating mediation outcomes.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Mediation purpose and outcomes • Types of disputes • Means of managing relevant stakeholders in mediation process • Dispute resolution processes 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Develop and review mediation guidelines in consultation with relevant stakeholders to manage mediation process • Prepare for mediation in accordance with mediation guidelines to achieve desired mediation outcomes • Set objectives for resolution to guide mediation process • Use a range of communication techniques to mediate dispute successfully 		

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<p>Innovation and Value Creation</p> <p><i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to organisational goals.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Evaluate mediation outcomes to determine achievement against objectives and identify potential areas for improvement for future mediations
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Demonstrate empathy and openness to embrace different perspectives during the mediation process to achieve desired mediation outcomes
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Research on history of disputes and dispute resolution within the organisation to apply to current and future situations
<p>Range of Application</p> <p><i>(where applicable)</i></p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>N/A</p>

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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Skill Code	BM-BCM-501E-1	Skill Category	Business Continuity Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop and Maintain Business Continuity Strategies, Policies and Guidelines		
Skill Description	This skill describes the ability to develop business continuity policies and framework as well as reporting readiness of business continuity plans.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Relevant regulatory requirements and leading practice principles of business continuity management • Types of tests for testing business continuity plans • Types of test results components and how they fit into the overall testing plan • Assessment reporting to relevant stakeholders 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Design organisation-wide business continuity policies and framework to maintain critical business functions and recover from disruptive events • Ensure alignment of business continuity plans with organisational strategic objectives • Establish business continuity management governance to support the development and implementation of business continuity plans and guidelines • Report readiness of business continuity plans to relevant stakeholders 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Conduct independent review and audit of business continuity plans to ensure the integration of the business continuity plans of various business units across the organisation • Refine organisational business continuity plans to ensure relevance to the organisation in accordance with the current threat environment 		

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<i>values that are aligned to organisational</i>	
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Demonstrate empathy and openness to feedback to communicate business continuity strategies, policies and guidelines to employees to garner their support and buy-in for the implementation of the business continuity plans
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Conduct research relating to crisis management to aid in the review of business continuity strategies to enhance organisation's ability to respond to crisis effectively
<p>Range of Application</p> <p>(where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>Regulatory requirements must include:</p> <ul style="list-style-type: none"> • Company Legislation and Regulatory Framework • Singapore Code of Corporate Governance (Monetary Authority of Singapore) • Companies Act • Statements of Accounting Standards • Statements of Recommended Accounting Practice • International Accounting Standards • Monetary Authority of Singapore • Securities Industry Council • Accounting and Corporate Regulatory Authority • Commercial Affairs Department of the Ministry of Home Affairs • Singapore Code on Take-overs and Mergers

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Skill Code	BM-CM-501E-1	Skill Category	Business Continuity Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Direct End-to-End Change Management		
Skill Description	This skill describes the ability to develop and implement a change management strategy. This includes reviewing the organisational systems and processes and creating an environment for change management.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Enablers of change • Components of organisational readiness assessment • Components and objectives of change management implementation plans • Components of change management programme plans and change management process • Communication strategies to promote change • Individual role in contributing to change management as a strategic business partner 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Develop change management strategy and change management programmes in consultation with management • Implement change management strategy in accordance with implementation plans 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Review organisational systems, processes and policies to identify areas of improvement for appropriate change management programmes and initiatives • Create an environment conducive for change management • Monitor, evaluate and refine change management strategy and programmes in accordance with desired organisational outcomes 		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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<i>enhance business values that are aligned to organisational</i>	
Social Intelligence and Ethics <i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i>	The ability to: <ul style="list-style-type: none"> • Sponsor change management programmes and initiatives to gain buy-in from relevant stakeholders
Learning to Learn <i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i>	The ability to: <ul style="list-style-type: none"> • Critically appraise one's role in the change management process to improve one's performance in directing and managing the change management process
Range of Application (where applicable) <i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i>	N/A

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
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Skill Code	BM-COM-505E-1	Skill Category	Communication
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Resolve Conflicts with Stakeholders		
Skill Description	This skill describes the ability to resolve conflicts with stakeholders to reach mutually agreed outcomes. It includes identifying and assessing conflict situations, selecting, evaluating and implementing conflict resolution approaches and evaluating outcomes to determine learning points.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Signs of conflict • Stages of conflicts • Causes of conflict • Communication techniques • Conflict resolution techniques • Legal, regulatory, ethical and socio-cultural constraints related to conflict resolution 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Identify and assess potential conflict situations in accordance with organisational policies and procedures to determine nature of conflict • Select and evaluate conflict resolution approaches in accordance with organisational policies and procedures to support desired outcomes 		
Innovation and Value Creation <i>It refers to the ability to generate</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Implement conflict resolution approaches to reach mutual agreed outcomes 		

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<i>purposive ideas to improve work performance and/or enhance business values that are aligned to organisational</i>	
Social Intelligence and Ethics <i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i>	The ability to: <ul style="list-style-type: none"> • Demonstrate openness and willingness to embrace different perspectives during conflict resolution to maintain relationships and achieve desired outcomes
Learning to Learn <i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i>	The ability to: <ul style="list-style-type: none"> • Evaluate outcomes to determine learning points for future conflict situations
Range of Application (where applicable) <i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i>	Legal, regulatory, ethical and socio-cultural constraints related to conflict resolution must include: <ul style="list-style-type: none"> • Relevant legislation • Codes of practice • Business ethics • Policies and guidelines • Social responsibilities • Cultural and societal expectations and influences

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Skill Code	BM-FIN-503E-1	Skill Category	Finance
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop and Establish Financial Budget and Plans		
Skill Description	This skill describes the ability to develop financial plans and budgets in line with the organisational strategies. It also includes formulating and reviewing financial plans, reviewing and monitoring budgets and presenting findings and recommendations to relevant stakeholders for review.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Types of financial milestones and performance indicators • Methods of identifying factors that may impact financial plans or budgets • Assumptions and parameters of financial forecasts • Means of communication of budget plans • Stakeholders to discuss and negotiate cost allocation and targets with • Significant issues pertaining to budgets 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Determine short and long-term financial needs to assess current financial situation • Formulate financial plans aligned to overall organisational strategies to guide budget preparation • Establish allocation of resources to meet organisational financial plans • Review financial forecasts to anticipate changes in circumstances • Review draft budgets in accordance with organisational guidelines to ensure currency • Report findings, recommendations and options to relevant stakeholders for review in accordance with organisational policies 		

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<p>Innovation and Value Creation</p> <p><i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to organisational goals.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Monitor and evaluate actual figures against budgets to identify and address variances
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Adhere to organisational and professional code of conduct, values and ethics when developing and establishing financial budgets and plans to ensure fair and accurate reporting
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Keep abreast of internal and external factors to determine impact on budget preparation and required response by subscribing to diverse information channels and participating in discussion platforms with supervisors and peers
<p>Range of Application</p> <p><i>(where applicable)</i></p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>N/A</p>

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Skill Code	PRE-HRM-6006-1	Skill Category	Human Resource Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Conduct Interviews and Make Hiring Decisions		
Skill Description	This skill describes the ability to conduct interview and make hiring decisions for the business unit. It also includes an awareness of fair employment practices, market trends and developments in relation to interview processes and techniques.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Fair employment practices, tripartite guidelines for fair employment relating to recruitment and selection • Legal and ethical considerations relating to recruitment and selection data and processes • Organisational policies and procedures • Models and methods for evaluating and shortlisting applicants • Communication and negotiation techniques • Market trends and developments in relation to interview processes and techniques 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Evaluate all applications to shortlist candidates for the interview • Evaluate data gathered from the interview session to select preferred candidate 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business</i>	N/A		

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<i>values that are aligned to organisational</i>	
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Adhere to privacy and confidentiality considerations that govern all human resource transactions • Conduct the selection interview using appropriate interview techniques to review applicants' suitability
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Critically appraise one's performance in the interview process for future interview sessions
<p>Range of Application</p> <p>(where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	N/A

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Skill Code	PRE-HRM-5004-1	Skill Category	Human Resource Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop Workplace Learning Plans		
Skill Description	This skill describes the ability to develop workplace learning plans to meet the learning and development needs of the organisation. It also includes development and evaluation of workplace learning plans and incorporation of relevant workplace learning strategies.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Workflow review process to establish learning and training needs in the workplace • Workplace learning strategies • Trends and developments in workplace learning 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Establish the scope and requirements for workplace learning, using workflow process reviews with relevant stakeholders • Determine and select appropriate workplace learning strategies, based on findings from workflow process reviews • Develop workplace learning plans, incorporating relevant workplace learning strategies with contextualisation 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Validate workplace learning plans for design improvements 		

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<i>aligned to organisational</i>	
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Consult with stakeholders on draft workplace learning plans
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Keep abreast of trends in workplace learning and development to maintain currency of learning and development plans
<p>Range of Application</p> <p>(where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	N/A

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Skill Code	PRE-HRM-5003-1	Skill Category	Human Resource Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop On-the-Job Training Programme		
Skill Description	This skill describes the ability to plan and develop On-the-Job Training (OJT) programmes to achieve organisational needs. It also includes the characteristics of OJT, planning OJT programmes, developing OJT blueprints, creating OJT materials, and evaluating OJT programmes.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • On-the-Job Training (OJT) frameworks, including structured and unstructured OJT • Roles of the relevant stakeholders • Process of designing and developing OJT blueprints and OJT materials • Five- step coaching process • Processes for evaluating OJT programme design • Processes for reviewing and critiquing OJT blueprints' quality • Trends and developments in OJT 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Determine the parameters of OJT programmes, based on relevant stakeholders' requirements • Design and develop OJT blueprint, in accordance to the findings of the training needs analysis (TNA) • Develop the required OJT training materials, based on adult learning principles and sound instructional design concepts • Review and critique quality of existing OJT blueprints 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Evaluate effectiveness of OJT programme designs to meet organisational needs 		

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<i>values that are aligned to organisational</i>	
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Engage key stakeholders in the design of OJT blueprints to ensure their relevance
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	N/A
<p>Range of Application</p> <p>(where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	N/A

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Skill Code	PRE-HRM-6007-1	Skill Category	Human Resource Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Resolve Grievances and Disputes		
Skill Description	This skill describes the ability to assist organisation members in resolving grievances and disputes. It also includes investigating claims and managing negotiations.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Evolution of tripartism in Singapore’s Industrial Relations system • Roles of tripartite parties including boards of inquiry, Ministry Of Manpower (MOM), judicial systems including National Wage Council and Industrial Arbitration Court, employers and unions in resolving grievances and disputes • Organisational policies and procedures which provide clarification or assistance in the methods, techniques and tools available to address grievances and disputes • Models and methods for engaging, negotiating and communicating with employees and unions to limit disputes • Principles and details of organisational wage, performance and incentive systems • Standards or codes of practice relating to industrial practices, collective agreements and terms and conditions of service • Models and methods for handling grievances and disputes • Communication techniques and channels relevant for engaging stakeholders • Characteristics and motivations of individuals involved in the collective bargaining process and the industrial relations system • Standards or codes of practice relating to the management of grievances and disputes • Models and methods for handling grievances and disputes • Market trends and developments in relation to human resource and industrial practices • Principles and details of organisational wage, performance and incentive systems • Roles of tripartite parties (government, unions and employers) in the Singapore Industrial Relations system • Union and organisational escalation processes for working with grievances and disputes • Union organisational structures and relationships, including the 		

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	National Trade Union Congress' (NTUC) relationships with affiliated unions
<p>Application and Adaptation</p> <p><i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Analyse legislative requirements and guidelines regarding labour management relations, industrial practices and compliance requirements appropriate to the organisation context • Document all interactions and agreements to ensure follow-through and commitment by all parties involved
<p>Innovation and Value Creation</p> <p><i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to organisational</i></p>	N/A
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Present improvement recommendations proposal to stakeholders in accordance with organisational procedures • Maintain communication and effective working relationships with representatives of unions and organisations to prevent escalation of grievances and disputes • Work with parties involved to investigate the validity and credibility of claims • Prepare and support others to develop possible responses or solutions based on review of information • Communicate with parties involved to agree to the issues under consideration • Negotiate with parties involved to achieve agreement regarding mutually acceptable outcomes using appropriate questioning and conflict resolution techniques • Maintain communication and engagement with parties involved to

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	ensure agreed outcomes are implemented
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	N/A
<p>Range of Application</p> <p>(where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	N/A

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Skill Code	PRE-ICT-5002-1	Skill Category	Info-Communication Technologies
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Produce Advanced Spreadsheet Outputs using Spreadsheet Applications		
Skill Description	This skill describes the ability to use spreadsheet applications to produce advanced spreadsheet outputs for management reports. It also includes in-depth knowledge of MS Excel, including its features.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Formatting of cells and worksheets • Functions and formulas • Charts • Analyses with tables, sorting and filtering 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Apply advanced formatting options in handling worksheets • Use functions associated with logical, statistical, financial and mathematical operations • Create charts and apply advanced chart formatting features • Work with tables and lists to analyse, filter and sort data • Use linking, embedding and importing features to integrate data 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Enhance productivity by working with named cell ranges, macros and templates 		

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<i>aligned to organisational</i>	
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Validate and audit spreadsheet data • Collaborate on and review spreadsheets with key stakeholders
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	N/A
<p>Range of Application</p> <p>(where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	N/A

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Skill Code	LPM-VIS-501C-0	Skill Category	Leadership
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Lead Managers to Develop Organisational and Governance Strategies		
Skill Description	This skill describes the ability to lead managers to develop organisational strategies and review corporate governance management to meet organisational needs. It also includes modelling of leadership and providing direction and guidance to line managers.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • The relationship between high level organisational strategy and the development and implementation of business plans and processes at lower levels within the organisation • The relationship between high level organisational strategy and the development and implementation of business systems and processes to support corporate governance and social responsibility requirements • Legal and ethical considerations relating to organisational strategy development, corporate governance and social responsibility • Organisational policies and procedures relating to organisational strategy development, corporate governance, social responsibility management and organisational expectations and performance of managers • Relevant professional or industry codes of practice and standards relating to corporate governance, social responsibility, and leadership roles • Implications and impact on employees and the organisation arising from organisational strategic planning process and corporate governance management process 		

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<p>Application and Adaptation</p> <p><i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Research and report on trends and factors of strategic value to the organisation or business unit to support strategic planning • Consult with stakeholders to define mission and objectives for the organisation or business unit to support strategic planning • Facilitate management team involvement in the development of organisational or business unit strategies to ensure alignment to business goals • Communicate organisation’s corporate governance and social responsibility requirements to facilitate organisational compliance • Engage employees to guide the implementation of organisational plans to achieve business goals • Model leadership and behaviours to demonstrate application of organisational values, behaviours and governance priorities in all actions
<p>Innovation and Value Creation</p> <p><i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to organisational goals.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Review systems and processes to identify required changes to improve compliance management on corporate governance and social responsibility requirements
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Communicate clear, inspiring organisational goals, strategies and plans to garner stakeholder support and buy-in • Apply emotional intelligence to guide own thinking and actions and to influence and persuade stakeholders towards the achievement of business goals

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<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Engage in regular self-reflection to identify own areas for improvement in leading strategic planning • Improve own strategic planning skills by subscribing to diverse learning channels and participating in peer discussion platforms to enhance workplace performance
<p>Range of Application</p> <p><i>(where applicable)</i></p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>N/A</p>

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Skill Code	LPM-RLT-501C-0	Skill Category	People and Relationship Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Foster Business Relationships and Organisational Diversity		
Skill Description	This skill describes the ability to develop effective working relationships and networks to provide strategic value to the organisation. It also includes developing and maintaining business and professional networks and encouraging workforce diversity and cooperation through strategies and conflict management.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Legal and ethical considerations relating to organisational participation in networking and opportunities for collaboration, workplace diversity and conflict management • Organisational policies and procedures relating to business networking, organisational diversity and conflict management • Relevant professional or industry codes of practice and standards for managing organisational diversity and business networking • Relevant professional or industry codes of practice and standards relating to business networking • Relevant local, regional and international networks • Common barriers to developing a diverse and cooperative workplace 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Identify and prioritise networks which may provide strategic value to the organisation or the individuals to facilitate networking decisions • Identify and review the constraints that may affect participation in networks to develop appropriate responses • Pursue collaborative opportunities to support mutually beneficial outcomes • Develop strategies to support diversity and cooperation at all levels of the organisation • Identify sources of conflict and negotiate issues to reach acceptable outcomes 		

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<p>Innovation and Value Creation</p> <p><i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to organisational goals.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Review the effectiveness of conflict management strategies and take action to prevent recurrence of conflict
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Manage relationships to achieve cross-cultural cooperation and positive outcomes for individuals, teams and the organisation • Support individuals to attain respect and address instances of unfairness or discrimination to promote a positive working environment • Adjust interpersonal style and respond appropriately to emotional cues when interacting with others to meet the requirements of the social and cultural business context
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Keep abreast of organisational diversity management strategies by subscribing to diverse learning channels and participating in peer discussion platforms to enhance own knowledge for workplace application
<p>Range of Application</p> <p><i>(where applicable)</i></p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>N/A</p>

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Skill Code	LPM-PER-501C-0	Skill Category	Personal Management and Development
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop Self to Maintain Professional Competence at Senior Management Level		
Skill Description	This skill describes the ability to improve organisational communications and influence decision-making as a senior member of a business unit or division. It also includes developing own leadership style and capability.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Legal and ethical considerations relating to organisational communications, decision-making and personal conduct at the workplace • Organisational policies and procedures relating to organisational communications and development of professional competence • Implications and impact of organisational communication processes on stakeholders • Implications and impact of own leadership style and capability on employees and the organisation • The relationship between high level organisational strategy and the development and implementation of business plans and processes at business unit or divisional level • Underlying issues and trends that may affect decision-making by stakeholders 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Use appropriate methods of communication to promote the organisation • Encourage and display effective communication techniques and behaviours to demonstrate the organisation's values and ethics • Work with the leadership team to develop plans to achieve strategic priorities and directions of the organisation 		

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<p>Innovation and Value Creation</p> <p><i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to organisational goals.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Collaborate with stakeholders to develop communication channels and enhance organisational communications
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Influence stakeholders to pursue actions which support the achievement of the organisation's strategic priorities and directions • Maintain integrity of self throughout the decision-making process to meet requirements on organisational code of conduct decision-making • Apply emotional intelligence to guide own thinking and actions when interacting with stakeholders • Demonstrate alignment between personal ethics and values and those of the organisation to develop own leadership style
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Use opportunities to self-reflect on own work performance and leadership style to identify areas for improvement • Maintain awareness and understanding of the skills and knowledge of colleagues and competitors to identify professional development opportunities for self
<p>Range of Application</p> <p><i>(where applicable)</i></p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>N/A</p>

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

Skill Code	PRE-PMA-6001-1	Skill Category	Project Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Plan, Manage and Control Projects		
Skill Description	This skill describes the ability to manage projects within the context of a business activity which encompasses both product development and “change” projects. This involves an appreciation of the issues and current techniques for successful project planning and control, including the selection and motivation of project teams.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Techniques for recognising the benefits of a project management approach • Techniques for recognising, anticipating and managing the inherent uncertainties and difficulties in project activities • Techniques for recognising and appraising the human, financial and business implications of options and actions, and making decisions in difficult and uncertain situations • Methods for planning and managing dynamic development and change • Effective operation within the context of project management • Management of the inherent uncertainties and difficulties in project activities • Human, financial, business implications of options and actions of project management • Decision making in difficult and uncertain situations • Planning and managing dynamic development and change 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Identify and operate effectively within the context of project management • Interpret and apply the principles and philosophies which underlie successful project management • Evaluate theoretical and practicable knowledge and understanding of the human factors which influence the conduct of project management • Review and apply knowledge, understanding and the ability to systematically apply the methodologies and tools used in project management 		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

<p>Innovation and Value Creation</p> <p><i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to organisational</i></p>	N/A
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	N/A
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	N/A
<p>Range of Application</p> <p>(where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be</i></p>	N/A

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

<i>demonstrated.</i>	
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**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

Skill Code	BM-PM-504E-1	Skill Category	Project Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Review and Endorse Project Plan and Deliverables		
Skill Description	This skill describes the ability to evaluate, review and endorse project planning and management outcomes and project deliverables. It includes controlling and managing project contingencies.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Principles and objectives of risk and risk analysis • Key project management functions and related project management outcomes • Internal and external factors that may affect project plan • Change management process 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Evaluate baseline project planning and management outcomes in accordance with project requirements • Assess potential issues to control and manage project contingencies 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Review and endorse project planning and management outcomes on a regular basis to facilitate timely delivery of project deliverables • Review and endorse project deliverables to take into consideration organisational risk and quality control policies and processes 		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

<i>organisational</i>	
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Seek inputs and feedback from stakeholders when reviewing project planning and management outcomes to ensure individual concerns and expectations are addressed
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Keep abreast of changes in internal and external factors to enable effective management of project contingencies by subscribing to diverse information channels
<p>Range of Application</p> <p>(where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	N/A

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

Skill Code	BM-RM-503E-1	Skill Category	Risk Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop a Risk Management Framework Policy and Process		
Skill Description	This skill describes the ability to develop an organisation's risk management framework, policy and process in line with the organisation's risk management philosophy. It also includes establishing risk management context and policy, reviewing and setting target risk, identifying and analysing risk events, as well as designing, refining and communicating risk management framework and process to the organisation.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Components of risk management policy • Internal and external risk events • Inherent risk and residual risk • Target risk of the organisation such as key risk indicators / metrics 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Establish organisation's context to formalise risk management process in accordance with risk management philosophy • Establish risk management policy in consultation with relevant stakeholders to guide organisational risk management • Identify risk events and analyse risks in the organisation as part of the risk management process to facilitate organisational risk management • Design a risk management framework and key risk management process in consultation with relevant stakeholders to guide organisational risk management 		
Innovation and Value Creation <i>It refers to the ability to generate purposive</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Review risk points and set target risk for the organisation in consultation with relevant stakeholders to manage organisational risk 		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

<p><i>ideas to improve work performance and/or enhance business values that are aligned to organisational</i></p>	
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Demonstrate empathy and appreciation of others' views when communicating risk management framework and process to employees to garner their support and buy-in
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Keep abreast of inherent, residual, internal and external risk factors to mitigate organisation's exposure to risk by subscribing to various information and learning platforms
<p>Range of Application</p> <p>(where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>Risk management philosophy must refer to:</p> <ul style="list-style-type: none"> • A set of shared beliefs and attitudes characterising how organisation considers risk in all business activities, from strategy development and implementation to its day-to-day activities <p>Risk points must refer to:</p> <ul style="list-style-type: none"> • Inherent risk level in the organisation • Residual risk level in the organisation

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

Skill Code	BM-RM-509E-1	Skill Category	Risk Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Manage Risk Across Business Units		
Skill Description	This skill describes the ability to manage risk across business units. It includes assessing risk profiles, establishing risk context, evaluating and selecting risk response activities, as well as guiding and refining risk management process to achieve alignment across business units.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Factors in enterprise risk management • Financial tools related to risk management 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Assess risk profiles across business units to determine applicable risk response activities • Establish risk context to define scope of risk management process across business units • Evaluate and select appropriate risk response activities to manage risks across business units • Guide alignment of risk management process across business units to ensure effective organisational risk management 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Refine risk management process for business units to achieve appropriate return on investment 		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

<i>enhance business values that are aligned to organisational</i>	
Social Intelligence and Ethics <i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i>	The ability to: <ul style="list-style-type: none"> • Demonstrate empathy and openness to feedback to communicate risk management process across business units to garner support and buy-in
Learning to Learn <i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i>	The ability to: <ul style="list-style-type: none"> • Augment own knowledge on organisational risk management practices by subscribing to diverse learning channels and discussion platforms to ensure continuous learning for workplace application
Range of Application (where applicable) <i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i>	N/A

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

Skill Code	BM-SM-502E-1	Skill Category	Sales and Marketing
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop Domestic Sales and Marketing Operational Plans		
Skill Description	This skill describes the ability to develop domestic sales and marketing operational plans. It also includes reviewing organisation's sales and marketing performance and identifying domestic marketing opportunities to establish and refine sales and marketing operational plans.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Sales and marketing objectives • Business case • Market trends and developments • Impact of social and cultural factors on domestic marketing strategies • Factors that impact domestic sales and marketing operational plans 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Use key performance metrics to review sales and marketing performance • Identify and scope sales and marketing opportunities within the domestic market to guide the development of sales and marketing operational plans • Design and establish sales and marketing operational plans to align to organisational strategies and objectives 		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

<p>Innovation and Value Creation</p> <p><i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to organisational goals.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Monitor and review sales and marketing operational plans to identify potential refinements
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Promote a cooperative climate to cultivate positive working relationships when working with stakeholders to develop domestic sales and marketing operational plans
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Keep abreast of industry marketing trends by subscribing to diverse information channels to identify new developments that may impact on an organisation's sales and marketing plan
<p>Range of Application</p> <p><i>(where applicable)</i></p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>N/A</p>

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

Skill Code	BM-SM-503E-1	Skill Category	Sales and Marketing
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop International Sales and Marketing Operational Plans		
Skill Description	This skill describes the ability to develop international sales and marketing operational plans. It also includes assessing international business opportunities and evaluating strategic options and risks to establish and refine international sales and marketing operational plans.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Sales and marketing objectives • Market trends and developments • Impact of social and cultural factors on international marketing strategies • Factors that impact international sales and marketing operational plans" 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Assess international business opportunities to identify potential value to the organisation • Evaluate strategic options and risk factors for international business opportunities to guide the development of sales and marketing plans • Design and establish international sales and marketing operational plans to align to organisational strategies and objectives 		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

<p>Innovation and Value Creation</p> <p><i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to organisational goals.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Monitor and review international sales and marketing operational plans to identify potential refinements
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Promote a cooperative climate to cultivate positive working relationships when working with stakeholders to develop international sales and marketing operational plans
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Keep abreast of international marketing trends by subscribing to diverse information channels to identify new developments that may impact on an organisation's international sales and marketing plans
<p>Range of Application</p> <p><i>(where applicable)</i></p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>N/A</p>

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

Skill Code	BM-SM-504E-1	Skill Category	Sales and Marketing
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Evaluate Sales and Marketing Outcomes		
Skill Description	This skill describes the ability to evaluate sales and marketing outcomes. It also includes establishing performance targets, measuring and evaluating performance outcomes and recommending improvements to sales and marketing operational plans to enhance sales performance.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Dimensions of marketing effectiveness • Appropriate types of data to gather • Tools used to report marketing performance, such as dashboards • Objectives of reporting marketing performance 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Establish performance targets to meet sales and marketing strategies and objectives • Select performance metrics to measure effectiveness of sales and marketing operational plans • Evaluate performance of sales and marketing operational plans to determine if sales and marketing objectives are meet 		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

<p>Innovation and Value Creation</p> <p><i>It refers to the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to organisational goals.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Use evaluation outcomes to recommend improvements to sales and marketing operational plans
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Demonstrate empathy and openness to feedback when recommending improvements to sales and marketing operational plans to secure support and buy-in from stakeholders
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Consult with the sales and marketing team on a regular basis to gain insights on sales and marketing performance and issues to enhance own knowledge and make improvements to the organisation's sales and marketing operation plans
<p>Range of Application</p> <p><i>(where applicable)</i></p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>N/A</p>

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

Skill Code	BM-SPI-501E-1	Skill Category	Strategy Planning and Implementation
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop Organisational Strategies and Policies		
Skill Description	This skill describes the ability to develop organisational strategies and policies by analysing the impact of internal and external influencing factors and seeking consultation from relevant stakeholders. It also includes reviewing and refining the strategies and polices and presenting them to management for endorsement.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Processes to develop organisational strategies and policies • Impact of internal and external influencing factors 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Develop organisational strategies to align to organisational objectives and in inputs from consultation with relevant stakeholders • Develop organisational policies to align to organisational directions and business targets and inputs from in consultation with relevant stakeholders • Analyse impact of internal and external influencing factors to support organisational strategies and policies development 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Review and refine organisational strategies and policies and present to management to seek endorsement 		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

<i>enhance business values that are aligned to organisational</i>	
Social Intelligence and Ethics <i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i>	The ability to: <ul style="list-style-type: none"> • Demonstrate openness to ideas and suggestions when presenting organisational strategies and policies to management for endorsement to ensure individual views are acknowledged and addressed
Learning to Learn <i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i>	The ability to: <ul style="list-style-type: none"> • Keep abreast of trends in the external environment which may impact the viability and currency of the organisation's strategies and policies to ensure continuous update of knowledge to facilitate strategic planning
Range of Application (where applicable) <i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i>	N/A

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

Skill Code	BM-SPI-509E-1	Skill Category	Strategy Planning and Implementation
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Establish Business Strategies for the Business Function		
Skill Description	This skill describes the ability to develop business strategies for a business function. It includes evaluating impact of critical business functions and internal and external factors, conducting situational analysis, as well as formulating and presenting business function strategies for management's approval and reviewing and refining them on a regular basis.		
Knowledge and Analysis <i>It refers to gathering, cognitive processing, integration and inspection of facts and information required to perform the work tasks and activities.</i>	<p>The ability to understand:</p> <ul style="list-style-type: none"> • Objectives of functional strategies • Own role in conduct of situational analysis • Critical business functions 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the occupation, and the ability to react to and manage the changes at work.</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Evaluate impact of critical business functions on organisational performance to identify implications for strategy formulation • Conduct situational analysis to identify factors affecting the organisation • Analyse impact of internal and external influencing factors on business function strategies to facilitate strategy formulation • Formulate business function strategies to align to organisational strategies, goals and objectives • Present business function strategies to management to seek endorsement 		
Innovation and Value Creation <i>It refers to the ability to generate purposive</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Review and refine business function strategies on a regular basis to align with organisational strategies, goals and objectives 		

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

<p><i>ideas to improve work performance and/or enhance business values that are aligned to organisational</i></p>	
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided by professional codes of ethics.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Demonstrate openness to ideas and suggestions when seeking management endorsement on business function strategies to ensure individual views are acknowledged and addressed
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of one's area of work.</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Improve own capability in developing business unit strategies by subscribing to diverse learning channels to enhance workplace performance
<p>Range of Application</p> <p>(where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	<p>N/A</p>

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
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Version Control

Version	Date	Changes Made	Edited by
1.0	12 October 2016	Initial Version	SSG and EDB

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
MANUFACTURING/PRODUCTION/OPERATIONS MANAGER**

Definitions of the Five (5) Domains

Domain	Definition
Knowledge and Analysis	Knowledge includes the gathering of facts and information through traditional and digital forms. Analysis involves the cognitive processing, integration and inspection of single or multiple sources of facts and information required to perform work tasks and activities and takes into consideration, the work contexts in which the tasks and activities are carried out. The result of knowledge and analysis produce judgements on work tasks/activities/issues/areas, and the conceptualisation of solutions to solve problems at work.
Application and Adaptation	Application involves the ability to perform work tasks and activities defined by the requirements of the occupation. Adaptation involves the ability to react to and manage the changes in the work contexts. The result of application and adaptation leads to the production of psycho-motor actions and behavioural reactions to the work tasks/activities/issues/areas, and the execution of the planned solutions to solve problems at work.
Innovation and Value Creation	Innovation includes the ability to generate purposive ideas to improve work performance and/or enhance business values that are aligned to the organisational goals. As a result of innovation, the organisation is able to reap the values from individual or team contributors to achieve organisational growth.
Social Intelligence and Ethics	Social intelligence includes the ability to appreciate and use affective factors in leadership, relationship and diversity management guided by professional codes of ethics as effective individuals or team contributors.
Learning to Learn	Learning-to-learn includes the ability to improve on self-development within and outside of one's area of work. It involves the continual inspection of one's knowledge, analytical, application, adaptive, innovative and social skills that are needed to perform the work optimally and/or solve problems effectively.