

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
SKILLS STANDARDS FOR
ASSISTANT MANUFACTURING MANAGER/SECTION MANAGER**

Occupation: Assistant Manufacturing Manager/Section Manager

Occupation Description:

The Assistant Manufacturing Manager/Section Manager assists the Manufacturing/Production/Operations Manager in coordinating and overseeing the day-to-day production operations and schedules. He/She also collates and analyses production and budget data, resolves production-related issues and oversees Workplace Safety and Health regulations for the production area.

The Assistant Manufacturing Manager/Section Manager also enhances production efficiency through the implementation of new or enhanced production processes and the acquisition of new machinery.

The Assistant Manufacturing Manager/Section Manager is a team player who works together with Machinists, Engineers and other colleagues within the organisation to support organisational goals.

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 Assistant Manufacturing Manager/Section Manager are summarised as below:

Skill Category	Skill Sub-Category	Skills	
Operations Planning		PRE-OPL-5006-1	Develop New Product Manufacturing Process Design Strategy
		PRE-OPL-5007-1	Develop Resource Plan for Production
Operations Production		PRE-OPR-5004-1	Develop Operational Plans to Meet Operational Targets
		PRE-OPR-5005-1	Develop Shop Floor Tracking and Control Plan through Management Execution Systems
Maintenance		PRE-MAI-5008-1	Develop a Maintenance Plan
Sustainable Manufacturing		PRE-SMN-5002-1	Develop Sustainable Manufacturing Framework for Management of Operations
		PRE-SMN-5003-1	Develop Carbon Footprint Reduction Implementation Plan
Value Analysis		PRE-VEN-5001-1	Develop Cost Reduction Strategies
Manufacturing Productivity and Innovation		PRE-MPI-5018-1	Design Continuous Improvement Systems
		PRE-MPI-5019-1	Design Lean Manufacturing using Six Sigma
		PRE-MPI-5020-1	Develop Successful Innovation Projects
		PRE-MPI-5021-1	Design Productivity Improvement Programmes
Quality Management Systems		PRE-QMS-5002-1	Design Quality Systems

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Skill Category	Skill Sub-Category	Skills	
Supply Chain and Logistics Management		PRE-SCL-5005-1	Design Manufacturing and Supply Chain Management Plan
		PRE-SCL-5004-1	Develop Relationships with Supply Chain
Workplace Safety and Health		PRE-WSH-5009-1	Develop a Business Case for Workplace Safety and Health
		PRE-WSH-5008-1	Design and Lead Workplace Safety and Health Systems
Business Analytics		PRE-BAN-5003-1	Operationalise Analytics Models
		PRE-BAN-5004-1	Leverage on Data Mining Techniques for Manufacturing Excellence
Business Negotiation		BM-BN-501E-1	Manage and Direct Negotiations
Communication		BM-COM-502E-1	Establish and Maintain Strategic Business Partner Relationships
		BM-COM-506E-1	Conduct Presentations to Senior Management
Finance		BM-FIN-303E-1	Prepare Budget for Business Unit
Human Resource Management		PRE-HRM-5005-1	Manage Industrial Relations Processes
Intellectual Property		PRE-IPR-5001-1	Apply Basic Knowledge of Intellectual Property (IP) to support IP-related Organisational Procedures
Leadership and People Management		LPM-VIS-401C-0	Lead Team Leaders to Develop Strategies and Governance Management
		LPM-CHG-401C-0	Facilitate Innovation and Lead Team Leaders to Implement Change

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Skill Category	Skill Sub-Category	Skills
		<p>LPM-RLT-401C-0 Cultivate Workplace Relationships and Diversity</p> <p>LPM-DEV-401C-0 Develop Team Leaders through Capability Development and Coaching</p> <p>LPM-RES-301C-0 Monitor and Reward Performance across Teams to Support Achievement of Results</p> <p>LPM-PER-401C-0 Develop Self to Maintain Professional Competence at Managerial Level</p>
Project Management		<p>BM-PM-505E-1 Lead Programme and Project After Action Review</p> <p>BM-PM-502E-1 Establish Project Feasibility</p> <p>BM-PM-503E-1 Establish Project Scope</p>
Risk Management		<p>BM-RM-401E-1 Evaluate and Review Compliance with Applicable Legislation and Regulations for the Business Unit</p> <p>BM-RM-402E-1 Operationalise and Manage Corporate Governance Policy for the Business Unit</p> <p>BM-RM-404E-1 Manage Risk in the Business Unit</p>
Sales and Marketing		<p>PRE-SMA-4001-1 Understand Sales and Marketing in a Manufacturing Organisation</p>
Strategic Planning and Implementation		<p>PRE-SPI-4002-1 Understand Business Management</p> <p>PRE-SPI-5003-1 Provide Information for Management Decision Making</p>

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Skill Category	Skill Sub-Category	Skills	
Personal Management and Development		ES-PMD-401G-1	Develop Personal Effectiveness at Managerial Level
		ES-PMD-501G-1	Develop Professional Image and Competence to Achieve Personal Career Goals
Analytical, Conceptual and Evaluative		ES-ACE-501G-1	Apply Systems Thinking in Problem Solving and Decision Making
Interpersonal		ES-IP-501G-1	Manage Cross-Functional and Culturally Diverse Teams

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Skill Code	PRE-OPL-5006-1	Skill Category	Operations Planning
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop New Product Manufacturing Process Design Strategy		
Skill Description	This skill describes the ability to develop a new product manufacturing process design strategy. It also includes design for manufacture, determining the process capability and the facilitation of its initial production.		
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"> • Benchmarks for best practice in quality • Comparative analysis techniques • Quality assurance schemes • Process of strategic planning • Communication strategies • Procedures for documentation and reporting • Code of practice • 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"> • Review product design with client and the production team to agree on technical specifications, aesthetic requirements, timelines, cost and other market requirements • Determine industry or regulatory requirements for the product • Determine material requirements for product • Determine process requirements for product • Trial new product through the process 		
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"> • Interpret product trial results to optimise the production of the new product 		

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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>	The ability to: <ul style="list-style-type: none"> • Confirm the design brief of new product in consultation with 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"> • Establish processes to generate commitment to and opportunities for learning
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-OPL-5007-1	Skill Category	Operations Production
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop Resource Plan for Production		
Skill Description	This skill describes the ability to develop a resource plan to control the scheduling of time and resources for production. It also includes ensuring that the allocated resources are capable of meeting the production requirements and those of the customer, and that the allocations effectively integrate with existing schedules.		
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"> • Information on production activities • Interpret production schedules, and the techniques used for scheduling production activities • Information that should be included in production schedules • Factors to be taken into account when preparing the schedules • Methods to assess and schedule resource requirements • Methods and techniques for capacity planning • Process used to validate production schedules • Procedures for changing production schedules • Method to develop contingency plans • Methods of evaluating the consequences of schedule changes • Methods for recovery of losses arising out of departures from project schedule • Problems that occur during the implementation of production schedules • 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"> • Prepare and review production schedules • Ensure sufficient resources are available for production • Produce contingency plans to handle actual and predicted changes to planned use of resources • Validate and evaluate scheduling systems and procedures used 		

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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</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Seek suggestions on improvements to production scheduling
<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 the production team on resources required for production 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>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>N/A</p>

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Skill Code	PRE-OPR-5004-1	Skill Category	Operations Production
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop Operational Plans to Meet Operational Targets		
Skill Description	This skill describes the ability to develop operational plans to meet the organisation's production targets. It also includes planning, acquiring and managing resources and executing 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"> • Planning techniques and tools • Resource management • Risk management • Analytical problem solving techniques • Continuous improvement process • Strategies for monitoring and improving performance • Reporting and record management • 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"> • Develop the organisation's operational plan in accordance with the organisation's business plan and production targets • Identify key performance indicators to measure the effectiveness of the operational plan • Identify and manage the requisite physical and human resources to execute the operational plan • Implement the operational plan and monitor key performance indicators to assess the effectiveness of the plan 		
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"> • Propose improvements to the operational plan to enhance its effectiveness 		

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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 key stakeholders and the production team when developing operational plan • Seek endorsement on the operational plan from key 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>	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

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Skill Code	PRE-OPR-5005-1	Skill Category	Operations Production
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop Shop Floor Tracking and Control Plan through Management Execution Systems		
Skill Description	This skill describes the ability to apply shop floor tracking and control through the use of a manufacturing execution system (MES). This includes the ability to model a manufacturing shop floor environment and conduct tracking and monitoring, the ability to determine the overall equipment effectiveness (OEE), and the ability to control shop floor operations.		
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"> • Metrics and key performance indicators (KPIs) • Metric system implementation • Components and functionality of Management Execution System (MES) production tracking system • ISA-95 standards and the hierarchy model • Concepts of overall equipment effectiveness (OEE) • Common causes of equipment-related losses • Concept and usefulness of Work Order (WO) tracking • Optimisation methods to solve dynamic resource allocation problems • Product traceability and technologies • 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"> • Contextualise performance indicators based on company indicators • Use metrics to diagnose a business problem • Calculate overall equipment effectiveness (OEE) performance index and operations metrics • Use configuration functions to define machine parts and configure routes • Use WO functions to generate, dispatch, track and monitor WOs 		
Innovation and Value Creation <i>It refers to the ability</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Use resource optimisation methods to solve dynamic allocation problems 		

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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"> • Identify optimal maintenance strategy with production resource constraints
<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>The ability to:</p> <ul style="list-style-type: none"> • Keep abreast of developments in MES to ensure that the latest metrics are applied
<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>

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Skill Code	PRE-MAI-5008-1	Skill Category	Maintenance
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop a Maintenance Plan		
Skill Description	This skill describes the ability to develop the organisation's maintenance plan in accordance with the organisation's overall maintenance strategy and systems. It also includes determining resources required to undertake maintenance activities and handling requests for changes in maintenance schedules and 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"> • 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 • Maintenance teams training and development programmes • Workplace Safety and Health regulations 		

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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"> • Produce, agree and update maintenance procedures, schedules and plans • Ensure that schedules and plans are capable of meeting all relevant outputs required • Manage changes requested to maintenance schedules from the production team • Complete and store relevant maintenance data and documentation accurately • Ensure maintenance activities are carried out correctly in line with agreed organisational processes and procedures
<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"> • Propose improvements that may enhance the organisation's maintenance strategy and systems
<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"> • Lead maintenance activities within the department • Communicate maintenance activities to the team • Seek appropriate approval on changes to maintenance schedules
<p>Learning to Learn</p> <p><i>It refers to the ability to develop and improve one's self within and outside of</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Maintain departmental competency skills matrix of team members in the area of maintenance

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<i>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/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/Equipment shadow boards

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Skill Code	PRE-SMN-5002-1	Skill Category	Sustainable Manufacturing
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop Sustainable Manufacturing Framework for Management of Operations		
Skill Description	This skill describes the ability to develop a sustainable manufacturing framework by identifying strategies for more sustainable use of resources. It also includes the identification of waste as part of the plan for achieving better sustainability outcomes in a process as well as quantifying theoretical and actual resource consumption.		
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"> • Methods of material balancing • Methods of energy balancing • Methods of comparing theoretical with actual resource consumption • Methods for mapping manufacturing processes and resources consumed • Methods of measuring actual resource usage • Concept of waste 		
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 all significant resources used in the production process • Identify consumption measurements for each resource • Determine consumption for each resource • Analyse processes to determine root causes of emission • Compile data, implications and recommendations to prepare resource use audit report 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Compare consumption of each resource to determine the loss • Develop strategies and recommendations for improvements in reducing waste 		

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<i>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"> • Consult with stakeholders in the preparation of the resource use audit report
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 management of sustainable manufacturing through industry networks and diverse learning platforms
Range of Application (where applicable) <i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i>	Theoretical consumption of resources refers to the minimum amount of resources per product as defined by the consumer multiplied by the rate of production.

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Skill Code	PRE-SMN-5003-1	Skill Category	Sustainable Manufacturing
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop Carbon Footprint Reduction Implementation Plan		
Skill Description	This skill describes the ability to lead in an organisation's efforts to reduce its carbon footprint. It also includes developing implementation plans and monitoring it for efficiency 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"> • Fundamentals of Environment Management System (EMS) as defined by ISO 14001 • Methods by which the carbon footprint reduction plan can contribute to the implementation of ISO 14001 • Methodology and key components of CAR2E • Methods to screen and select potential 'hot spots' • Methods for projecting carbon reduction potentials • Methods to identify suitable and feasible technology to address carbon footprint 'hot spots' • Key components of carbon footprint reduction plan • Tools and techniques to analyse costs and benefits of implementing carbon footprint reduction initiatives • Tools and techniques to prioritise carbon footprint reduction initiatives • Tools and techniques to develop action plans for carbon footprint reduction 		
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 the potential of 'hot spots' for carbon footprint reduction • Prioritise carbon footprint reduction initiatives for implementation based on organisational requirements • Develop carbon footprint reduction plan for implementation of initiatives 		
Innovation and Value Creation	<p>The ability to:</p> <ul style="list-style-type: none"> • Evaluate potential initiatives for carbon footprint reduction plan 		

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<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 carbon footprint reduction implementation plan 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>	<p>The ability to:</p> <ul style="list-style-type: none"> • Keep abreast of changes in carbon footprint reduction technology and relevant legislation
<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-VEN-5001-1	Skill Category	Value Analysis
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop Cost Reduction Strategies		
Skill Description	This skill describes the ability to examine the costs of a product or service with a view to reducing costs. This includes conducting a detailed study of a product or service's costs, analysing it by cost components to determine the best method of lowering the overall costs.		
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"> • Cost components of product • Major cost which are controllable and how to control them • Concept and types of waste • Interrelationship of cost components and benefits • Methods of estimating costs/benefits • Acceptable costs/benefits ratio • 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"> • Identify and analyse relevant cost component categories for organisation, product and process • Identify customers, including final features or benefits valued by customer • Express features or benefits in cost terms • Determine methods of increasing costs/benefits ratio • Analyse interactions between cost components • Develop cost optimisation plans • Implement and monitor the implementation of cost optimisation 		
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"> • Analyse causes of waste costs • Determine methods of reducing or eliminating waste costs 		

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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"> • Communicate cost reduction strategy to stakeholders to gain buy-in and 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>	The ability to: <ul style="list-style-type: none"> • Keep abreast of new methods or processes which may potentially lead to reduction in costs
Range of Application (where applicable) <i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i>	Waste is any activity which does not contribute to customer benefit / features in the product. Within operations, categories of waste must include: <ul style="list-style-type: none"> • Excess production and early production • Delays • Movement and transport • Poor process design • Inventory • Inefficient performance of a process • Making defective items • Activities which do not yield any benefit to the organisation or any benefit to the organisation's customers <p>Cost must include:</p>

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- The monetary value of expenditures able to be directly identified for supplies, services, direct labour, materials, components, cost of inventory, faults and re-works, rejects / scrap, equipment and other items used in the production of the product
- Allocations and estimates for indirect costs (e.g. indirect labour, rent, energy, water and cost of capital) where a direct monetary value cannot be identified

Cost optimisation plans must include:

- Application scope (e.g. product(s), services, areas, employees and suppliers included in plan)
- Target costs and target costs reductions
- Implementation period
- Method of monitoring
- Method of communicating progress to stakeholders

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SKILLS STANDARDS FOR
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Skill Code	PRE-MPI-5018-1	Skill Category	Manufacturing Productivity and Innovation
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Design Continuous Improvement Systems		
Skill Description	This skill describes the ability to design and manage an organisation's systems and processes related to continuous improvement. It also includes the use of change management to implement and facilitate continuous 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"> • Organisational continuous improvement goals and targets • Organisation's continuous improvement systems, tools, techniques, systems and processes • Information gathering for improvement processes • Assess feedback and suggestions for improvement opportunities • Change management tools and practices 		
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 improvement opportunities in line with organisation's continuous improvement goals and targets • Develop recommendations and plans for improvements • Implement systems and processes to facilitate continuous improvement 		
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"> • Monitor and evaluate continuous improvement processes to identify further refinements 		

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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>	The ability to: <ul style="list-style-type: none"> • Lead a work team to participate in identifying improvement opportunities • Seek approval from relevant stakeholders on recommendations and plans for improvement
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

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Skill Code	PRE-MPI-5019-1	Skill Category	Manufacturing Productivity and Innovation
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop Lean Manufacturing using Six Sigma		
Skill Description	This skill describes the ability to leverage on Lean Six Sigma to develop 'lean' manufacturing plans for the organisation. It also includes introducing ways to enhance existing 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"> • 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 • Develop a manufacturing plan using Lean Six Sigma • Implement manufacturing plan and communicate changes to the production team 		
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"> • Assess how existing manufacturing processes can be improved through the use of Lean Six Sigma 		

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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"> • Seek key stakeholders' endorsement on the 'lean' manufacturing 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 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 run • Understanding the 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

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- Identifying value and eliminating waste
- 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

Recommending an appropriate approach to implementing sustainable Lean Enterprise must include:

- 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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Skill Code	PRE-MPI-5020-1	Skill Category	Manufacturing Productivity and Innovation
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop Successful Innovation Projects		
Skill Description	This skill describes the ability to put in place the appropriate frameworks to successfully develop innovation projects.		
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 evaluating innovation projects in terms of financial and non-financial benefits • Process of implementation planning • Appropriate vehicle for prototyping, trialing or development needs of innovation projects • Challenges with regards to the implementation of innovation projects • Process of evaluating and mitigating potential risks with regards to the implementation of innovation projects • Detailed business plan with logical and achievable stage gate dates, roles and responsibilities • Appropriate commercial route for innovation projects • Coherent and compelling argument to senior managers outlining the merits of the adoption of an innovation project 		
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 implementation plan to successful exploit the proposed innovation project • Determine the strategy to evaluate innovation project prior to market launch • Perform risk analysis in the adoption of innovation project • Develop a coherent business plan for the innovation project • Determine the appropriate commercialisation strategy for the innovation project 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Analyse return of investment (ROI) on a potential innovation project 		

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<i>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"> • Generate a coherent elevator pitch to the senior management team for the adoption of the innovation project
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

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Skill Code	PRE-MPI-5021-1	Skill Category	Manufacturing Productivity and Innovation
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Design Productivity Improvement Programmes		
Skill Description	This skill describes the ability to apply strategies, methods and tools used to design productivity improvement programmes. It also includes implementing productivity measurement metrics, implement productivity project progress tracking systems and planning incentives.		
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"> • Productivity principles and techniques • Characteristics of productivity improvement programmes • Workplace and organisational improvement goals • Methodology on identifying improvement opportunities • Methodology on tracking, monitoring and reviewing results of improvement programmes • Methodology on incorporating rewards and recognition into organisation • Methodology on confirming effectiveness of strategies deployed 		
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 scope of the programme in consultation with key stakeholders • Develop the productivity improvement programme and provide estimates of the necessary human resource time and cost using appropriate project management tools • Define milestones for the programme and identify unmet goals or gaps 		
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"> • Review the effectiveness of the productivity improvement programme in accordance with organisational objectives 		

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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>	The ability to: <ul style="list-style-type: none"> • Seek endorsement from key stakeholders on productivity improvement programmes • Communicate productivity improvement programmes to key personnel
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

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Skill Code	PRE-QMS-5002-1	Skill Category	Quality Management Systems
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Design Quality Systems		
Skill Description	This skill describes the ability to manage the development of internal quality systems and external quality systems in accordance with organisational procedures. It also includes identifying and maintaining documentation for the quality 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 standards and regulations • Customer requirements • Sources of quality assurance information • Documentation requirements of quality systems • Organisational quality assurance and quality control procedures 		
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 relevant procedures in line with the organisation's quality management strategy • Identify quality documentation required, including records of improvement and initiatives • Undertake regular audits of quality management system, its policies and procedures 		
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"> • Review organisation's performance in meeting quality standards to ascertain procedures that may enhance the organisation's performance 		

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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>	The ability to: <ul style="list-style-type: none"> • Consult with key personnel to define roles in quality management system • Communicate quality message to the production team to ensure understanding
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"> • Implement structured training programmes in accordance with quality system requirements
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-SCL-5005-1	Skill Category	Supply Chain and Logistics Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Design Manufacturing and Supply Chain Management Plan		
Skill Description	This skill describes the ability to understand how manufacturing and supply chain management processes are inter-related and monitoring solutions. It also includes identifying gaps in the organisation's existing supply chain to propose improvements.		
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"> • Fundamental concept of manufacturing, SCM, ERP, MES, inventory management, product quality control, remote monitoring, and data processing and analysis, including the key layers and modules of these systems and the methods and techniques used • Logic and approach to generate MPS in different manufacturing environment (Make-to-order, Make-to-stock, Assemble-to-order) • Logic and approach to generate MRP, including different Bill of Material (BOM) structures, and some basic MRP techniques • Emerging techniques and trends in ERP systems • Basic inventory models and advanced inventory policies used in supply chain • Methods for dynamic resource allocation and their mechanics, including characteristics of dispatching rules • Fundamental concept of Auto ID systems, current major Auto ID players, key modules in Auto ID systems • Types of data collection devices & auto-ID technologies and implementation considerations, methodology • Emerging techniques and trends in Auto ID systems and approach of evaluating Auto ID systems • Quality assurance analysis for manufacturing processes, and correlation modelling using statistics and neural networks • Wireless communications fundamentals & architectures • Machine or device interface, human-machine interface, design condition and methodology • Fundamental concept and International Standards of OEE, considering OEE factors: Availability, Reliability, and Maintainability - the metrics used to measure plants' efficiency and effectiveness, and approach to implement OEE 		

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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"> • Plan, map, audit and manage the organisation’s supply chain • Apply knowledge of ERP and Extended ERP system and plan MPS and MRP based on sales plan, sales orders and production capacity • Manage the behaviour of inventory, and inventory models and service levels for inventory management in a supply chain • Apply basic inventory models and advanced inventory policies catering to uncertainty in the supply chain • Understand the mechanics of resource allocation, strategies & methods for dynamic resource allocation, and apply dynamic resource allocation and dispatch optimization methods • Prepare shop floor tracking and monitoring plans for production status and machine process or tool condition monitoring • Select suitable cost effective data collection devices, auto-ID and sensing devices • Conduct bottom up data analysis and design the physical database for storing shop floor data • Apply statistical and neural networks in data mining for product quality control
<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"> • Analyse gaps in the organisation’s existing supply chain to ascertain improvements that will enhance the organisation’s business competitiveness
<p>Social Intelligence and Ethics</p> <p><i>It refers to the ability to use affective factors in leadership, relationship and diversity management guided</i></p>	<p>The ability to:</p> <ul style="list-style-type: none"> • Seek endorsement on the organisation’s supply chain management plan from key stakeholders • Communicate supply chain management plan to the production team

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<i>by professional codes of ethics.</i>	
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>	<p>The ability to:</p> <ul style="list-style-type: none"> • Keep abreast of emerging techniques and trends in auto-ID systems and approach of evaluating auto-ID systems through industry networks
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-SCL-5004-1	Skill Category	Supply Chain and Logistics Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop Relationships with Supply Chain		
Skill Description	This skill describes the ability to developing, maintaining and improving current relationships with the organisation's supply chain. It also includes exploring the benefits of risks of such relationships and resolving any problems.		
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 • Information sources on supply chain processes • Supply chain management theories, models and practices • Market research 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"> • Evaluate current relationships within the supply chain to identify strengths and weaknesses • Resolve issues within the supply chain to minimise disruption 		
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"> • Propose improvements that may enhance supply chain relationships 		

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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>	The ability to: <ul style="list-style-type: none"> • Maintain and improve relationships with the supply chain
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 developments in the supply chain through network events
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-WSH-5009-1	Skill Category	Workplace Safety and Health
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop a Business Case for Workplace Safety and Health		
Skill Description	This skill describes the ability to analyse, create and communicate a successful business case to meet an organisation's Workplace Safety and Health (WSH) needs. It also includes formulating strategies to communicate the business case to decision makers.		
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"> • Decision makers in the organisation • Business and WSH needs • Business Planning Cycle • Types of business-related evaluation techniques • Evaluation criteria to shortlist viable business recommendations • Types and sources of input and information required for evaluation • Format of a business case • Source of different perspectives and decision-making styles of various decision makers 		
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 organisational WSH need in relation to business needs and organisational business planning cycle • Shortlist viable recommendations to meet the organisational WSH need • Analyse the business aspects of the shortlisted recommendations to address decision makers' business needs • Formulate a strategy to communicate the business case to decision makers 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work</i>	N/A		

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<p><i>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>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>N/A</p>

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Skill Code	PRE-WSH-5008-1	Skill Category	Workplace Safety and Health
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Design and Lead Workplace Safety and Health Systems		
Skill Description	This skill describes the ability to design and lead workplace safety and health (WSH) procedures and practices to ensure safety at the workplace. It also includes overseeing and ensuring compliance with standards and designing and leading identification of hazards and assessment of risks.		
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"> • Workplace procedures for reporting WSH issues • Requirements and tools available to monitor the workplace environment • Industry codes of practice and Singapore Standards • Safety signs and symbols • 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"> • Design and lead WSH and environmental practices • Design and lead identification of hazards and assessment of risks • Design and lead and apply control measures 		
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"> • Manage, maintain and review risk control measures 		

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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>Relevant industry codes of practice (CP) and Singapore Standards (SS)</p> <ul style="list-style-type: none"> • CP for safety in welding and cutting (and other operations involving the use of heat) • CP for selection, use and maintenance of respiratory protective devices • CP for selection, use, care and maintenance of hearing protectors • SS 217, Specification for industrial safety signs • SS 473, Specification for personal eye-protectors – Part 1: General requirements • SS 473, Specification for personal eye-protectors – Part 2: Selection, use and maintenance • CP 98, Material Safety Data Sheet (Safety Data Sheet)

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Skill Code	PRE-BAN-5003-1	Skill Category	Business Analytics
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Operationalise Analytics Models		
Skill Description	This skill describes the ability to deploy the agreed statistical models into the production environment for users' operational use. It also includes working with relevant stakeholders to define the requirements of the deployed model, educating users and monitoring the model to ensure it stays aligned with 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"> • Considerations of analytics architecture • Analytics architecture • Existing analytical tools or data warehouse in 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"> • Select runtime environments for the statistical models to be deployed, and user requirements, with the relevant stakeholders • Define analytics architecture requirements with IT teams to deploy the statistical models • Develop the processes, to support the operations of the model, with relevant stakeholders • Monitor and tune the deployed models to ensure they deliver the expected outcomes and aligns with the business changes 		
Innovation and Value Creation <i>It refers to the ability to generate</i>	N/A		

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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>	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>Considerations of analytics architecture must include:</p> <ul style="list-style-type: none"> • Performance of the analytical architecture • Access to data • Data security • Users' skill sets

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Skill Code	PRE-BAN-5004-1	Skill Category	Business Analytics
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Leverage on Data Mining Techniques for Manufacturing Excellence		
Skill Description	This skill describes the ability to leverage on the fundamentals of data warehouse and data mining techniques for different manufacturing process applications. It also includes developing models for process or equipment performance data analysis through the use of data mining 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"> • Motivation of data mining • Concept of data cube • Type of data clustering and their features • Steps of K-means clustering • Basic terms such as mean, variance, standard division and correlation • Concept of model coefficient and residual error • Basic terms such as total sum of squares (SST), sum of squares due to regression (SSR), sum of squares due to error (SSE), T-test, confidence interval • Guideline to evaluate the time series forecasting model. • Difference between regression and ARMA models. • Structure of BP neural network • Advantages of neural networks • Data normalisation 		
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 potential data mining applications for company. • Design a data cube and a data schema • Apply hierarchical clustering technique for quality control. • Apply K-means clustering technique for quality control • Measure correlation and dependency between process variables • Build linear regression model • Evaluate regression model accuracy and model coefficient significance • Build ARMA model • Develop regression mode and ARMA model for equipment auto-mould process • Develop a neural network using feed forward propagation • Develop a neural network using back propagation learning 		

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	<ul style="list-style-type: none"> • Develop neural network for predicting process yield
<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 (where applicable)</p> <p><i>It refers to the critical</i></p>	<p>Software must include:</p> <ul style="list-style-type: none"> • Microsoft excel • Data mining software tools • MatLab • LabView

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<i>circumstances and contexts that the skill may be demonstrated.</i>	
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Skill Code	BM-BN-501E-1	Skill Category	Business Negotiation
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Manage and Direct Negotiations		
Skill Description	This skill describes the ability to manage and direct negotiations to achieve organisation's desired outcomes. It also includes planning and preparing for negotiation, implementing negotiation guidelines and providing feedback for negotiation policy refinement.		
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"> • Negotiation styles • Results of effective negotiation • Conditions for successful negotiation 		
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"> • Plan and prepare for negotiation in accordance with negotiation strategies to achieve desired negotiation outcomes • Implement negotiation guidelines during negotiation process to achieve desired 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"> • Provide feedback to relevant parties to refine negotiation policy
<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"> • Identify and address needs and concerns of negotiating team with regard to negotiation process, roles and responsibilities 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"> • Source for past negotiation plans to gain insights to develop current negotiation plan to achieve desired outcomes
<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-COM-502E-1	Skill Category	Communication
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Establish and Maintain Strategic Business Partner Relationships		
Skill Description	This skill describes the ability to establish and maintain strategic business partner relationships. It includes identifying strategic business partners, evaluating their contributions towards organisational objectives, developing action plans to enhance relationships as well as reviewing the quality of relationships with strategic business partners.		
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"> • Strategic business partners' and their issues of interest • Ways that organisation's strategic business partners may contribute to its strategic objectives • Contributions made by strategic business partners • Agreements between organisation and strategic business partners • Legal, regulatory, ethical and socio-cultural considerations related to maintaining strategic business partner relationships 		
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 strategic business partners who may contribute to organisational strategies and objectives to establish and maintain business relationships • Evaluate strategic business partners' contributions to achieving organisational strategies and objectives to determine action plans to enhance business relationships • Develop action plans to enhance relationships with strategic business partners 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Review quality of professional relationships with strategic business partners to identify areas for improvement 		

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<i>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"> • Sustain professional relationships with strategic business partners to support organisational strategies and objectives
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"> • Engage in self-reflection to identify new platforms which offer opportunities to establish strategic business relationships with potential partners to support organisational objectives
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 maintaining strategic business partner relationships 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-COM-506E-1	Skill Category	Communications
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Conduct Presentation to Senior Management		
Skill Description	This skill describes the ability to conduct presentation to senior management. It also includes identifying presentation objectives and modes, preparing collaterals, delivering key messages and reviewing presentation outcomes to enhance future 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"> • Presentation guidelines to present to senior management • Types of presentation collaterals • Techniques to engage target audience 		
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 objectives of presentation and identify appropriate presentation modes to meet organisational requirements • Determine deliverables for target audience to develop presentation collaterals • Use appropriate presentation modes to deliver appropriate messages to target audience 		

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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 presentation outcomes to enhance future performance
<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"> • Assess reactions of target audience towards the presentation to respond appropriately to address their concerns
<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"> • Seek guidance and advice from peers and supervisors on past presentations to gain insights to plan the presentation
<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-FIN-303E-1	Skill Category	Finance
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Prepare Budget for the Business Unit		
Skill Description	This skill describes the ability to prepare budget and cash flow requirements for the business unit based on business functional objectives and operational plans. It also includes reporting budget calculations and discrepancies to stakeholders for decision-making and ensuring adherence to financial controls in accordance with policies and regulations.		
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 budgets • Parameters of budgets • Types of budgets • Key principles of accounting and financial systems • Types of data sources and data required to prepare a budget • Accounting principles and practices that are related to budget preparation • Key principles of budgetary control and budget plans • Budgetary control techniques • Requirements of Singapore's taxation policies • Functional objectives and key requirements • Organisational financial data • Financial analytical techniques and methodology • Relevant stakeholders to consult on budget calculations 		
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 business function strategies, functional objectives and operational plans to facilitate accurate forecasting and budgeting for the financial year • Calculate cash flow requirements of business unit to establish financing needs for the financial year • Compare previous actual data with estimations made by management to highlight discrepancies • Report budget calculations and discrepancies to relevant stakeholders to facilitate prompt management decision-making on budget allocation • Ensure adherence to financial controls to meet requirements of relevant organisational corporate governance and financial policies, 		

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	legislation and regulations
<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"> Identify opportunities for technological optimisation to enhance efficiency of the budget preparation process
<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 preparing budget for the business unit 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"> Improve own budget planning competency by subscribing to various learning and 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</i></p>	<p>Legislation and regulations must include:</p> <ul style="list-style-type: none"> Financial Reporting Standards (FRS), as issued by the Accounting Standards Council (ASC) General Accepted Accounting Principles Companies' Act Sarbanes and Oxley Act Internal control policies Taxation periods and timing

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<i>demonstrated.</i>	
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Skill Code	PRE-HRM-5005-1	Skills Category	Human Resource Management
		Skills Sub-Category <i>(where applicable)</i>	N/A
Skill	Manage Industrial Relations Processes		
Skill Description	This skill describes the ability to support industrial relation activities. It also includes collective bargaining and other activities relating to labour and management relations.		
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 policies and procedures which provide clarification or assistance in the methods, techniques and tools to support industrial practices • Models and methods for engaging, negotiating and communicating with stakeholders in labour and management relations • 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 • Communication techniques and channels relevant for engaging stakeholders • Evolution of tripartism in Singapore's Industrial Relations system and the roles • Tripartite parties (government, unions and employers) • Tripartite mechanisms including National Wage Council and Industrial Arbitration Court • Characteristics and motivations of individuals in the collective bargaining process • Models and methods for engaging, negotiating and communicating with stakeholders in labour and management relations • Roles of unions in the Singapore industrial relations system • Characteristics and motivations of individuals in the collective bargaining process 		
Application and Adaptation <i>It refers to the ability to perform the work tasks and activities required of the</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Research legislative requirements and guidelines to identify industrial practices and compliance requirements appropriate to the organisational context • Assist in the preparation and management of documentation relating to labour and management activities 		

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<p><i>occupation, and the ability to react to and manage the changes at work.</i></p>	<ul style="list-style-type: none"> • Research the validity and credibility of claims of parties to support collective bargaining • Promote the preparation of possible responses or solutions based on initial review of information • Monitor and communicate on actions to close outstanding issues and ensure agreed outcomes are implemented
<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>N/A</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"> • Promote communication practices to generate trust and honesty amongst stakeholders in labour and management relations
<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>N/A</p>

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<p>(where applicable)</p> <p><i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i></p>	
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Skill Code	PRE-IPR-5001-1	Skill Category	Intellectual Property
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Apply Basic Knowledge of Intellectual Property (IP) to support IP-related Organisational Procedures		
Skill Description	This skill describes the ability to analyse the various types of Intellectual Property (IP) supporting organisational procedures and applying IP knowledge to support implementation of IP registration procedures Singapore.		
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"> • Definition of Intellectual Property (IP) • Types of IP • Sources from which information about IP can be obtained • Registration procedures of various types of IP in Singapore 		
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 various types of IP in accordance with organisational procedures • Collate necessary IP-related materials for IP applications • Support organisational procedures, in collaboration with appropriate IP experts • Apply IP knowledge to support implementation of IP registration procedures in Singapore 		
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"> • Implement organisational IP-review processes 		

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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>	Types of IP must include: <ul style="list-style-type: none"> • Copyrights • Registered and unregistered trade marks (including certification marks, and a consideration of domain names and company/business names) • Patents, which may include software • Trade secrets and confidential information • Registered designs • Plant varieties • Geographical indications • Layout-design of integrated circuits

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Skill Code	LPM-VIS-401C-0	Skill Category	Leadership
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Lead Team Leaders to Develop Business Strategies and Governance Management		
Skill Description	This skill describes the ability to lead team leaders in the development of business unit strategies, operational plans and corporate governance management to meet organisational needs. It also includes providing direction and guidance to team leaders through regular engagement, modelling of leadership and expected behaviours.		
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 strategy and the development and implementation of team plans and processes • The relationship between high level strategy the development and implementation of business systems and processes to support corporate governance • Organisational policies and procedures relating to the development of departmental or business unit strategies, and corporate governance compliance management • Legal and ethical considerations relating to corporate governance • Relevant professional or industry codes of practice and standards relating to corporate governance • Implications and impact on employees and the organisation arising from team planning process and corporate governance 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"> • Facilitate team leaders' involvement in the development of departmental or business unit strategies to achieve business objectives • Lead team leaders to identify trends and issues impacting team performance and develop team operational plans to achieve team objectives • Communicate organisational values and expectations of behaviour in the workplace to guide team leaders in their behaviour and performance • Engage regularly with team leaders to provide the required support to achieve business unit goals 		

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	<ul style="list-style-type: none"> • 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"> • Develop and modify systems and processes to improve compliance management on corporate governance and social responsibilities 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 departmental or business unit strategic priorities to stakeholders to garner their support and buy-in • Assess emotional states of team leaders and respond appropriately to emotional cues when leading team leaders to ensure individual needs 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"> • Engage in regular self-reflection to identify own areas for improvement in leading strategy planning • Improve own strategy planning skills by subscribing to diverse learning channels and participating in peer review 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</i></p>	<p>N/A</p>

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<i>contexts that the skill may be demonstrated.</i>	
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Skill Code	LPM-CHG-401C-0	Skill Category	Change Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Facilitate Innovation and Lead Team Leaders to Implement Change		
Skill Description	This skill describes the ability to work with team leaders to manage change processes. It also includes facilitating innovation at the workplace, implementing change strategies and processes and evaluating the impact of change.		
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 change management • Organisational policies and procedures relating to the change management • Relevant professional or industry codes of practice and standards relating to change management • Key concepts and importance of a learning organisation in relation to organisational change • Theories and principles of change management • The differences between and attributes of positive and negative risks 		
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"> • Support enterprising behaviour and risk taking among team leaders by modelling enterprising behaviours and rewarding innovation to encourage desired behaviours • Assign roles and responsibilities to implement change strategies and processes • Identify systems and behaviours that may support or limit implementation activities to facilitate implementation • Work with team leaders to anticipate and plan for predictable consequences of change by applying systems thinking • Analyse data and feedback from team leaders to establish trends and identify actions and resources required to ensure change processes generate required benefits 		

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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"> • Identify opportunities for growth or improvement based on current achievements • Develop and review systems to share learnings from change implementation processes to guide future actions for improvement
<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 by acknowledging and addressing the feelings and perspectives of team leaders arising from the impact of change implementation to ensure individual needs 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"> • Identify competencies to help individuals and teams to respond positively to change • Keep abreast of change management systems and processes 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-RLT-401C-0	Skill Category	People and Relationship Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Cultivate Workplace Relationships and Diversity		
Skill Description	This skill describes the ability to cultivate collaborative and productive relationships at the workplace to support organisational priorities. It also includes building workplace relationships, promoting organisational diversity through systems and processes and managing of conflicts.		
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 participation in internal and external networking opportunities, conflict management and workplace diversity • Organisational policies and procedures relating to business networking, organisational diversity and conflict management • Relevant professional or industry codes of practice and standards relating to business networking • Implications and impact of networking and collaboration opportunities on employees and the organisation • Relevant local, regional and international networks • Common barriers to developing a diverse and cooperative workplace • Workforce characteristics and trends 		
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 working relationships with network members to improve knowledge sharing and networking opportunities • Pursue collaborative opportunities to support beneficial outcomes • Facilitate information exchange among network members to support organisational and team priorities • Develop and monitor the implementation of systems and processes to support organisational diversity strategies • Identify sources of conflict and negotiate issues to reach mutually 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 the conflict resolution strategies and take action to prevent the 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"> 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 systems and processes by subscribing to diverse learning channels 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-DEV-401C-0	Skill Category	People Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop Team Leaders through Capability Development and Coaching		
Skill Description	This skill describes the ability to identify team leaders' skill requirements and facilitate their learning opportunities to enhance performance. It also includes coaching of team leaders to help them develop their skills and gain confidence.		
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 the management of capability development • Organisational policies and procedures relating to capability development • Relevant professional or industry codes of practice and standards relating to management of capability development as a manager of a department or cross functional team • Implications and impact of coaching and mentoring activities on the individuals participating in the process • Models and methods of training needs analysis • Market trends and developments on new and emerging skill requirements, and learning and development 		
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 organisational strategies and business plans to identify impact on team competency requirements • Review current skills of team leaders using appropriate methods and tools to identify skills requirements • Work with team leaders to establish their learning priorities and learning and development plans • Identify learning and development opportunities and provide resources and support to facilitate the development of team leader skills 		

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ASSISTANT MANUFACTURING MANAGER/SECTION 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"> • Review capability development approach for team leaders to identify areas for improvement
<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"> • Provide coaching to team leaders to enhance their role performance, taking into consideration their emotional states
<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"> • Review coaching outcomes against coaching goals to identify areas for improvement in the coaching process • Improve own coaching 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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SKILLS STANDARDS FOR
ASSISTANT MANUFACTURING MANAGER/SECTION MANAGER**

Skill Code	LPM-RES-301C-0	Skill Category	Results Achievement
		Skill Sub-Category (where applicable)	N/A
Skill	Monitor and Reward Performance in a Team to Support Achievement of Results		
Skill Description	This skill describes the ability to implement team plans and monitor team's progress towards the achievement of results. It also includes managing and rewarding team 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"> • Organisational policies and procedures relating to interpretation and implementation of plans, and performance management processes and tools • Legal and ethical considerations relating to performance management and performance contracts • The relationship between business objectives and the development and implementation of plans and processes at the team level • The relationship between high level strategy and performance management processes at the team level • Implications and impact of performance management process on employees and 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"> • Work with team members to interpret team plans to seek common understanding • Allocate tasks and resources to team members based on each individual's skills, knowledge and experiences to ensure optimal deployment of team members • Negotiate and document the deliverables and performance expectations of each team member to track achievement of results • Lead team performance and monitor implementation of team plans to generate desired results • Provide regular feedback to team members to maintain awareness of expected and actual performance • Monitor and assess emerging risks that may impact on team performance and identify appropriate control and contingency measures to address risks 		

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	<ul style="list-style-type: none"> • Report on evaluation of team plan implementation to update management team • Manage and reward employee performance to ensure performance standards are met in accordance to team requirements • Identify learning and development programmes to support team and own performance
<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"> • Work with team members to evaluate outcomes of team plan implementation and team performance against success criteria to determine areas for improvements
<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"> • Assess emotional states of team members and respond appropriately to emotional cues when managing team performance to ensure individual needs 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 performance management processes by subscribing to diverse learning channels and participating in peer discussions to enhance own competence in managing performance management

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Range of Application <i>(where applicable)</i> <i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i>	N/A
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SKILLS STANDARDS FOR
ASSISTANT MANUFACTURING MANAGER/SECTION MANAGER**

Skill Code	LPM-PER-401C-0	Skill Category	Leadership and People Management
		Skill Sub-Category <i>(if applicable)</i>	N/A
Skill	Develop Self to Maintain Professional Competence at Managerial Level		
Skill Description	This skill describes the ability to communicate effectively and influence decision making as a manager of team leaders. It also includes demonstrating commitment to self- development.		
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 communication and decision making • Organisational policies and procedures relating to organisational communication and development of professional competence • The relationship between high level strategy and the development and implementation of business plans and processes at department level • Types of decision making models, methods and techniques • Implications and impact of communication processes on stakeholders • Implications and impact of own leadership style and capability on employees and 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"> • Use appropriate methods of communication to delegate responsibilities and duties to team leaders • Seek feedback from team leaders to enhance team cohesion and ensure common understanding of goals and requirements • Model effective communication techniques and behaviours to demonstrate organisational values and ethics • Contribute to the development of implementation plans to support strategic priorities and facilitate decision making process to garner support for the implementation plans 		
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"> • Address barriers to communication to improve collaboration and effectiveness when working with team leaders 		

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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>	<p>The ability to:</p> <ul style="list-style-type: none"> • Influence team leaders to pursue actions to support the achievement of the organisation's strategic priorities • Recognise own emotional states, their causes and effects on one's communication with others to maintain positive interpersonal relationships
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>	<p>The ability to:</p> <ul style="list-style-type: none"> • Identify areas for improvement and training to maintain currency of knowledge and skills through self-assessment and evaluation on current and future requirements of own work role
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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SKILLS STANDARDS FOR
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Skill Code	BM-PM-505E-1	Skills Category	Project Management
		Skills Sub-Category <i>(where applicable)</i>	N/A
Skill	Lead Programme and Project After-Action Review		
Skill Description	This skill describes the ability to lead a programme and project after action review (AAR). It includes setting programme and project AAR policies and guidelines, directing AAR discussions, as well as evaluating and following up on the implications of the AAR findings to establish improvements		
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 an after action review (AAR) • Potential programme and project management issues 		
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"> • Set programme and project AAR policies and guidelines in order to encourage continuous improvement and learning • Direct discussion to assess programme and project management outcomes • Evaluate implications of AAR findings and discussion topics on project management functions, organisational processes and procedures to determine follow-up actions 		
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"> • Establish improvements to project management functions and organisational processes and procedures based on AAR findings to enhance organisational performance 		

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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>	<p>The ability to:</p> <ul style="list-style-type: none"> • Demonstrate openness to feedback to set an open atmosphere to encourage active participation in AAR discussions
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>	<p>The ability to:</p> <ul style="list-style-type: none"> • Improve own capability in leading AAR by subscribing to diverse learning channels and discussion platforms to enhance workplace performance
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	BM-PM-502E-1	Skills Category	Project Management
		Skills Sub-Category <i>(where applicable)</i>	N/A
Skill	Establish Project Feasibility		
Skill Description	This skill describes the ability to assess the feasibility of and authorise projects based on feasibility assessment results. This includes carrying out project feasibility studies.		
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 objectives and capabilities • Assessment process • Methods to evaluate assessment models' findings • Feasibility factors • Measures of project benefits and outcomes 		
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 alignment of project with organisational objectives • Assess feasibility of carrying out project in accordance with organisational capabilities • Recommend authorisation of projects in accordance with feasibility assessment results 		
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"> • Seek inputs from supervisors to add value to the project feasibility assessment findings and recommendations 		

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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>	<p>The ability to:</p> <ul style="list-style-type: none"> Assess emotional states and respond appropriately to emotional cues when addressing project feasibility with project teams to maintain positive working relationships
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>	<p>The ability to:</p> <ul style="list-style-type: none"> Improve own capability in conducting project feasibility assessment by subscribing to diverse learning channels and discussion platforms to enhance workplace performance
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	BM-PM-503E-1	Skills Category	Project Management
		Skills Sub-Category <i>(where applicable)</i>	N/A
Skill	Establish Project Scope		
Skill Description	This skill describes the ability to define and authorise changes to a project's scope to ensure its successful completion. This involves defining project objectives and scope.		
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 stakeholders • Components of project plans • Change management process • Project charter • Project outcomes 		
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 project objectives and scope to meet organisational needs and guidelines or policies • Authorise project scope in accordance with organisational procedures for project execution 		
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 authorise changes to project scope to ensure that project objectives are fulfilled 		

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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>	<p>The ability to:</p> <ul style="list-style-type: none"> • Demonstrate empathy and appreciation of stakeholders' views when defining and establishing project scope to ensure individual concerns 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>	<p>The ability to:</p> <ul style="list-style-type: none"> • Study past projects to gain insights to establish current project scope
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	BM-RM-401E-1	Skill Category	Risk Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Evaluate and Review Compliance with Applicable Legislation and Regulations for the Business Unit		
Skill Description	This skill describes the ability to evaluate and review a business unit's compliance with applicable legislative and regulatory requirements. It also includes identifying relevant compliance requirements, areas of non-compliance, and proposing recommendations to stakeholders to close the non-compliance gap.		
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"> • Access appropriate sources of information to analyse relevant compliance requirements applicable to the business unit • Interpret relevant legislation and regulations, legal documents, standards and codes of practice relevant to the business unit to identify possible areas of non-compliance • Evaluate and report data on compliance to relevant stakeholders according to information format requirements to ensure stakeholder are updated and consulted • Relevant legislation and regulations applicable to industry • Appropriate sources of information on internal and external compliance requirements • Methodologies for both internal and external monitoring and evaluation • Data on compliance • Relevant stakeholders • Implications of non-compliance with relevant legislation and 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"> • Access appropriate sources of information to analyse relevant compliance requirements applicable to the business unit • Interpret relevant legislation and regulations, legal documents, standards and codes of practice relevant to the business unit to identify possible areas of non-compliance • Evaluate and report data on compliance to relevant stakeholders according to information format requirements to ensure stakeholder are updated and consulted 		

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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"> • Formulate recommendations and obtain sign-off to address areas of non-compliance with legal and other requirements in consultation with relevant stakeholders
<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 ethical code of practice in the evaluation of compliance by business unit to ensure adherence to legislative and regulatory requirements
<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 the latest legislative and regulatory requirements applicable to the organisation by subscribing to various information channels to ensure currency of knowledge and organisational compliance

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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>Relevant legislation and regulations must include:</p> <ul style="list-style-type: none"> • Post incorporation Accounting and Corporate Regulatory Authority (ACRA) regulatory requirements, which must include: <ul style="list-style-type: none"> ○ Organisation secretary ○ Annual general meeting ○ Financial year end ○ Annual return ○ Directors' report ○ Registration number • Inland Revenue Authority of Singapore (IRAS) filing requirements, which must include: <ul style="list-style-type: none"> ○ Timeline for filing requirements ○ Estimated chargeable income ○ Tax return filing ○ Audited or unaudited accounts • Accountants Act • Business Registration Act • Companies Act • Companies Act Reform • Workplace Safety and Health Act • Employment Act
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Skill Code	BM-RM-402E-1	Skill Category	Risk Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Operationalise and Manage Corporate Governance Policy for the Business Unit		
Skill Description	This skill describes the ability to operationalise corporate governance policy for the business unit through an operational plan to monitor compliance. It also includes interpreting, executing and communicating corporate governance policy as well as evaluating compliance with the policy.		
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"> • Regulatory frameworks • Corporate governance principles and related issues • Components of the Code of Corporate Governance • Techniques used in implementing 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"> • Interpret corporate governance policy for execution to ensure compliance on roles, accountabilities and responsibilities of employees • Develop processes to operationalise the corporate governance policy for the business unit • Communicate corporate governance policy to relevant stakeholders in accordance with organisational procedures to facilitate organisational compliance • Evaluate compliance with corporate governance policy to determine appropriate follow-up action 		

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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"> • Facilitate development of an operational plan to monitor and internalise corporate governance within the organisational culture
<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 ethical code of practice in the evaluation of compliance by the business unit to ensure adherence to legislative and regulatory requirements
<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 the latest legislative and regulatory requirements applicable to the organisation by subscribing to various information channels to ensure currency of knowledge and organisational compliance
<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>Regulatory frameworks applicable to local organisations must include:</p> <ul style="list-style-type: none"> • Organisation 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 • Registrar of Companies • Commercial Affairs Department of the Ministry of Finance • Takeover Code

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	<p>Components of the Code of Corporate Governance must include:</p> <ul style="list-style-type: none">• Organisation director matters• Remuneration matters• Accountability and audit• Communication with shareholders <p>Disclosure of corporate governance arrangements</p>
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Skill Code	BM-RM-404E-1	Skills Category	Risk Management
		Skills Sub-Category <i>(where applicable)</i>	N/A
Skill	Manage Risk in the Business Unit		
Skill Description	This skill describes the ability to evaluate and review a business unit's compliance with applicable legislative and regulatory requirements. It includes identifying relevant compliance requirements, areas of non-compliance, and proposing recommendations to stakeholders to close the non-compliance gap.		
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 legislation and regulations applicable to industry • Appropriate sources of information on internal and external compliance requirements • Methodologies for both internal and external monitoring and evaluation • Data on compliance • Relevant stakeholders • Implications of non-compliance with relevant legislation and 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"> • Interpret corporate governance policy for execution to ensure compliance on roles, accountabilities and responsibilities of employees • Develop processes to operationalise the corporate governance policy for the business unit • Communicate corporate governance policy to relevant stakeholders in accordance with organisational procedures to facilitate organisational compliance • Evaluate compliance with corporate governance policy to determine appropriate follow up action 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Access appropriate sources of information to analyse relevant compliance requirements applicable to the business unit • Interpret relevant legislation and regulations, legal documents, standards and codes of practice relevant to the business unit to identify 		

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<p><i>improve work performance and/or enhance business values that are aligned to organisational</i></p>	<p>possible areas of non-compliance</p> <ul style="list-style-type: none"> • Evaluate and report data on compliance to relevant stakeholders according to information format requirements to ensure stakeholder are updated and consulted
<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 ethical code of practice in the evaluation of compliance by business unit to ensure adherence to legislation and regulatory requirements
<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 the latest legislative and regulatory requirements applicable to the organisation by subscribing to various information channels to ensure currency of knowledge and organisational compliance
<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>Relevant legislation and regulations must include:</p> <ul style="list-style-type: none"> • Post incorporation Accounting and Corporate Regulatory Authority (ACRA) regulatory requirements, which may include: <ul style="list-style-type: none"> • Company secretary • Annual general meeting • Financial year end • Annual return • Directors' report • Registration number • Inland Revenue Authority of Singapore (IRAS) filing requirements, which may include: <ul style="list-style-type: none"> • Timeline for filing requirements • Estimated chargeable income • Tax return filing • Audited or unaudited accounts • Accountants Act

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	<ul style="list-style-type: none">• Business Registration Act• Companies Act• Companies Act Reform• Workplace Safety and Health Act• Employment Act
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Skill Code	PRE-SMA-4001-1	Skill Category	Sales and Marketing
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Understand Sales and Marketing in a Manufacturing Organisation		
Skill Description	This skill describes the ability to understand the concept of sales and marketing in a manufacturing organisation context. It also includes identification of opportunities for competitive advantage and understanding the marketing mix of 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"> • Relevant industry and market practices and standards • Four marketing essential elements • Organisations' marketing plans and competitive advantages • 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"> • Identify the organisation's current and emerging competitors • Determine the marketing mix, in relation to the organisation's targeted competitive advantage 		
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"> • Analyse the organisation's marketing plans to assess suitability in supporting the organisation's competitive advantage 		

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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>	The ability to: <ul style="list-style-type: none"> • Analyse data and emerging trends through market research to understand the organisation's market potential
Range of Application (where applicable) <i>It refers to the critical circumstances and contexts that the skill may be demonstrated.</i>	Four marketing essential elements must include: <ul style="list-style-type: none"> • Product – brand, quality, product range, packaging, delivery and customer service • Place – warehousing, outlet location, type of outlet, wholesalers, retailers and franchisers • Price – product cost, wholesale price, retail price, guarantees, allowances, deals, discounts and delivery terms • Promotion – internal marketing, word of mouth, branding, public reaction, sales promotion, personal selling, direct marketing, sponsorship, exhibitions, merchandising, packaging, corporate image and advertising

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Skill Code	PRE-SPI-4002-1	Skill Category	Strategy Planning and Implementation
		Skill Sub-Category	N/A
Skill	Understand Business Management		
Skill Description	This skill describes the ability to understand an organisation's business and management functions and issues. It also includes knowledge of management principles and organisational structures.		
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"> • Classical management theories • Management principles • Japanese management principles • Organisational structures • Management functions in an organisation • Management issues in relation to productivity, quality, profitability and human relations 		
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"> • Relate management principles to the organisation's business • Assess diverse organisational structures' suitability for manufacturing organisations • Correlate organisation functions in a typical manufacturing organisation with modern management practices 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to improve work performance and/or</i>	The ability to: <ul style="list-style-type: none"> • Analyse management issues in relation to productivity, quality, profitability and human relations in relation to the organisation's business 		

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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>Classical management theories must include:</p> <ul style="list-style-type: none"> • Fredrick W Taylor • Max Weber • Henri Fayol • Hawthorne Works Experiments <p>Japanese management styles must include:</p> <ul style="list-style-type: none"> • Kaizen • Poka Yoke • Kanban <p>Organisational structures must include:</p> <ul style="list-style-type: none"> • Tall • Flat • Hierarchical

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- Centralised
- De-centralised
- Matrix

Management functions in an organisation must include:

- Planning
- Organising
- Leading
- Resourcing
- Controlling
- Resourcing – personnel, finance, materials, facilities

Management issues in relation to productivity, quality, profitability and human relations must include:

- Leadership
- Motivation
- Team dynamics
- Industrial relations
- Use of technology
- Lean manufacturing
- Agile manufacturing

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Skill Code	PRE-SPI-5003-1	Skill Category	Strategy Planning and Implementation
		Skill Sub-Category <i>(where applicable)</i>	N.A.
Skill	Provide Information for Management Decision Making		
Skill Description	This skill describes the ability to provide information to management to facilitate decision making. It includes identifying and analysing information, updating management on issues requiring decision making and making recommendations to facilitate decision making.		
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 management decisions • Sources of information • Relevant stakeholders affected by management decisions 		
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 information needed for management decision making to facilitate decision making process • Find and analyse necessary information to seek management inputs • Determine relevant measures to monitor outcomes of management decisions • Update and inform management on business issues that require management decisions to seek management's direction 		
Innovation and Value Creation <i>It refers to the ability to generate purposive ideas to</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Substantiate and make recommendations on business issues to management to facilitate decision making 		

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<i>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"> • Apply emotional intelligence to guide one’s communication of information to influence management in their decision making
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"> • Improve own capability in information gathering and analysis by subscribing to diverse learning channels to enhance workplace performance
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	ES-PMD-401G-1	Skill Category	Personal Management and Development
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop Personal Effectiveness at Managerial Level		
Skill Description	This skill describes the ability to establish personal goals and evaluate them to justify one's roles and responsibilities in the achievement of organisational goals. It also includes time management, maintaining work-life balance, stress management and management of personal finances.		
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 motivational factors affecting personal goal setting and achievement • Strategies to link one's role and responsibilities to individual and organisational success • Factors that may affect the achievement of organisational goals • Benefits of prioritising work according to goals set • Barriers to effective time management that hinder the achievement of goals • Assistance available to overcome barriers to effective time management • Practices that promote personal well-being and aspects of personal management • Issues and problems related to personal and family responsibilities and their impact on work • Common sources of assistance available to support personal management • Sources of information for financial products • Factors to consider when using and maintaining credit 		
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</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Evaluate personal goals and align them to organisational goals • Justify one's role and responsibilities and their contribution towards the achievement of organisational goals • Manage time and resources to meet organisational goals • Examine the applicability of the common types of financial products for one's financial context • Promote work-life balance programmes to achieve organisational effectiveness 		

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<i>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"> Analyse causes of stress that affect self and staff and develop strategies and techniques to manage them
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"> Apply Emotional Intelligence and people-management techniques to get assistance from appropriate people such as consultants, peers and subordinates
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>	<p>The ability to:</p> <ul style="list-style-type: none"> Evaluate personal strengths and weaknesses and develop strategies to overcome weaknesses and leverage on personal strengths to contribute towards the achievement of organisational goals Evaluate one's existing financial situation using appropriate tools, and develop a plan to manage such a position
Range of Application (where applicable) <i>It refers to the critical circumstances and contexts that the skill</i>	N/A

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<i>may be demonstrated.</i>	
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Skill Code	ES-PMD-501G-1	Skill Category	Personal Management and Development
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Develop Professional Image and Competence to Achieve Personal Career Goals		
Skill Description	This skill describes the ability to leverage on traditional and new media tools to develop personal branding and professional image and achieve personal career goals. It also includes conducting marketing research, networking and presentations.		
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 to be considered in formulating personal career goals • Personal career portfolio and its characteristics • Aspects and benefits of personal branding • Definition of new media • Comparison of the various types of new media to promote personal brand • Characteristics of professional image • Types of social skills for networking sessions • Types of networking situations that can help one in securing job and assignment opportunities • Verbal and non-verbal (body) language that affect effectiveness of one's presentation • Aspects of effective presentation skills 		
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"> • Conduct market research to establish personal career opportunities and develop a career plan to meet personal career goals • Review requirements of selected career path to develop a personal career portfolio • Synthesise personal competencies to develop personal brand and optimise use of new media to promote personal brand 		
Innovation and Value Creation	<p>The ability to:</p> <ul style="list-style-type: none"> • Use effective presentation skills to promote personal competencies 		

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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>and brand to secure job or assignments</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 genuine interest and empathy for others by developing social and networking skills using new media tools and appropriate interpersonal approaches
<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"> • Assess personal competencies to formulate personal career goals • Develop and maintain professional image to project personal brand • Maintain professional competence to ensure the continuing relevance of personal brand and competencies to relevant stakeholders • Review achievement of personal career goals and develop corrective strategies to address unrealised career goals
<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>Definition of new media must include:</p> <ul style="list-style-type: none"> • Integration of traditional media such as film, visual, images, music, spoken and written word, with the interactive power of computer and communications technology, computer-enabled consumer devices and the Internet

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Skill Code	ES-ACE-501G-1	Skill Category	Analytical, Conceptual and Evaluative
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Apply Systems Thinking in Problem Solving and Decision Making		
Skill Description	This skill describes the ability to apply systems thinking to assess organisational issues. It also includes formulating and implementing solutions to address issues typically encountered by one assuming a managerial role.		
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"> • Definitions of systems thinking • Benefits of systems thinking • Organisation from a systems perspective • Situations that can affect the achievement of desired goals and outcomes • Comparison of the various system thinking tools and their application • Comparison of the various systems thinking approaches and their application to problem-solving • Characteristics and application of the decision-making models • Limitations of appropriate evaluation process to assess effectiveness of chosen solutions • Possible success indicators of chosen solutions 		
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 issues that affect the achievement of desired goals and outcomes in the macro context • Apply systems thinking approaches and processes to identify the root causes of non-achievement of desired goals and outcomes and the homeostasis of the organisation • Develop an implementation plan for the chosen solutions to resolve issues that affect the achievement of desired goals and outcomes in an organisation • Assess the effectiveness of the chosen solutions using an appropriate evaluation process 		

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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"> • Use systems thinking tools to formulate possible solutions to resolve issues that affect the achievement of desired goals and outcomes • Select suitable solutions using established criteria to resolve issues that affect the achievement of desired goals and outcomes • Recommend corrective actions to improve chosen solutions
<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"> • Document the process of applying systems thinking in problem-solving and decision-making according to organisational guidelines and appropriate methods
<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 self-reflection to view problems from a holistic manner taking into account overall structures, patterns and cycles
<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>Definitions of systems thinking must include:</p> <ul style="list-style-type: none"> • A way of helping a person to view systems from a holistic perspective that includes seeing overall structures, patterns and cycles in systems, rather than seeing only isolated events in the system • A way to identify the root causes of issues in organisations and to address them • A way of understanding that emphasises the relationships among a system's parts, rather than the parts themselves <p>Systems thinking approaches and their application to problem-solving</p>

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must include:

- Soft Systems Methodology (SSM) which includes:
 - Identification of outputs, attributes, criteria, measurements scales and models
 - Search for and generate different alternatives
 - Designing interventions to various components
 - Confirming system with relevant stakeholders
- Total Systems Intervention (TSI) which includes:
 - Creativity phase: Focuses on different aspects of the organisation's functioning
 - Choice phase: Choosing a set of methodologies to suit particular characteristics of the organisation's situation
 - Implementation phase: Generating specific proposal for change
- Systems design which includes:
 - Forecasting
 - Model building and simulation
 - Optimisation and control
- Strategic Assumption Surfacing and Testing (SAST) includes:
 - Group formation: A large group of people split into various groups
 - Assumption surfacing and rating: Groups discuss and list all assumptions inherent in systems
 - Within group dialectic debate:
 - Eliminates irrelevant assumptions
 - Ensures that assumption is self-evident and significant in the outcome of the strategy chosen and implemented
 - Between groups dialectic debate:
 - Extracts agreed assumptions
 - Debates on contentious assumptions to achieve agreement
 - Final synthesis
 - Groups all come together to propose and resolve all outstanding controversies
 - Policy decisions will be made then
 - Critical Systems Heuristic (CSH) which includes:
 - To identify boundary judgements systematically
 - To analyse alternative reference systems for defining a problem or assessing a solution proposal
 - To challenge in a compelling way any claims to knowledge or rationality or improvement that rely on hidden boundary judgments or take them for granted

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Skill Code	ES-IP-501G-1	Skill Category	People and Relationship Management
		Skill Sub-Category <i>(where applicable)</i>	N/A
Skill	Manage Cross Functional and Culturally Diverse Teams		
Skill Description	This skill describes the ability to manage workplace diversity and manage a diverse work team to achieve an organisation's goals. It also includes creating a positive work environment for diverse teams and establishing effective communication systems and strategies in communication and conflict resolution.		
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 diversity markers and their implications in a work team • Characteristics of major cultural dimensions • Common cultural diversity issues at the workplace • Team management strategies • Designing common goals and objectives • Maximizing team effectiveness and synergy • Ways in which diversity issues affect interpersonal relationships • Components of a communication system to facilitate communication among members of a diverse work team • Application of social competence in the context of diversity • Impact of cultural taboos on the effectiveness of a diverse work team • Strategies to convey negative news or performance to members of diverse cultures 		
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</i>	<p>The ability to:</p> <ul style="list-style-type: none"> • Examine the differences among the background of members in a diverse work team and their implications on maximizing team effectiveness and synergy to achieve common goals and objectives • Establish a system to facilitate communication among members within a diverse work team by applying effective communication techniques and social competence 		

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<i>changes at work.</i>	
<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"> • Assess diversity issues that have implications on a work team working towards common goals and objectives
<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"> • Align diverse work teams towards common goals and objectives • Establish a positive work culture in a diverse work team • Moderate diverse perspectives and opinions across team members from different disciplines and cultures
<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"> • Appreciate and empathise with the diverse needs, thoughts and feelings of team members in achieving desired outcomes

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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>N/A</p>
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Version Control

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

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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.