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| **Model Curriculum**  **QP Name: Warehouse, Inventory and Transport Manager (Electives – Automated Warehouse/ Cold chain Warehouse/ Dry Bulk Warehouse/ Bonded Warehouse/ Multi Modal Operation / Hub and Spoke Operations)**  **(Options – Bid process)**  **QP Code: LSC/Q0105**  **QP Version: 2.0**  **NSQF Level: 6**  **Model Curriculum Version: 2.0** |
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# Training Parameters

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| --- | --- |
| **Sector** | Logistics |
| **Sub-Sector** | Warehousing (Storage and Packaging) |
| **Occupation** | Warehousing operations, packaging, documentation and reporting, engineering/maintenance) |
| **Country** | India |
| **NSQF Level** | 6 |
| **Aligned to NCO/ISCO/ISIC Code** | NCO-2015/ 1324.1200/ 4321.0103/ 1324.0200 and ISCO-08/1324 |
| **Minimum Educational Qualiﬁcation and Experience** | Graduate + 3 years of relevant experience or Class XII + 6 years of relevant experience or Class X + 8 years of relevant experience or   Class X with 2 years of  ITI +  6 years of relevant experience or Class X with 1 year of  ITI +  7 years of relevant experience or Certificate-NSQF (Warehouse Supervisor - level 5) with 3 Years of relevant experience, 23 Years |
| **Pre-Requisite License or Training** | NA |
| **Minimum Job Entry Age** | 23 |
| **Last Reviewed On** | NA |
| **Next Review Date** | NA |
| **NSQC Approval Date** | NA |
| **QP Version** | 2.0 |
| **Model Curriculum Creation Date** | 04-07-2022 |
| **Model Curriculum Valid Up to Date** | 04-07-2025 |
| **Model Curriculum Version** | 2.0 |
| **Minimum Duration of the Course** | 750 |
| **Maximum Duration of the Course** | 1110 |

# Program Overview

This section summarizes the end objectives of the program along with its duration.

## Training Outcomes

At the end of the program, the learner will be able to:

* Analyse activities scheduled and corresponding resources allocated
* Assess compliance to regulatory requirements
* Generate business for the organisation and manage relationships with stakeholders including clients, customs, PGAs etc.
* Analyse operational and business performance to undertake improvement initiatives
* Manage business profitably by analysing profit and loss and undertaking operations improvement initiatives.
* Design warehouse layout and equipment
* Plan and coordinate customs clearance
* Generate MRP to plan for material receipt, procurement, storage, handling and movement
* Prepare forecasts to plan for material as per production, sales and dispatch requirement
* Comply to work place integrity, ethical and regulatory practices.
* Manage workplace for safe and healthy work environment by following and ensuring compliance to regulatory and safety norms
* Inspect invoices for correct application of GST
* Design layout, equipment, route and processes for automated, cold chain, dry bulk and bonded warehouse
* Assess asset utilisation in a warehouse
* Manage compliance to SOP in safe segregation, grading, storage, temperature control, microbiological control and movement of goods in a cold storage warehouse
* Manage cargo handling, volume/weight measurement, pest control, spillage control and equipment maintenance in a dry bulk warehouse
* Manage goods demarcation, segregation, bond issue, customs clearance and related activities in a bonded warehouse
* Manage multimodal operation activities in coordination with various stakeholders
* Direct hub and spoke activities to ensure streamlined operations

Manage bid processing activities to improve business turnover

## Compulsory Modules

The table lists the modules, their duration and mode of delivery.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| NOS and Module Details | Theory  Duration | Practical  Duration | On-the-Job Training Duration (Mandatory) | On-the-Job Training Duration (Recommended) | Total Duration |
| Bridge Module | **20** | **10** |  |  | **30** |
| Module 1: Introduction to Warehouse Manager | 20 | 10 |  |  | 30 |
| LSC/N9601 – Conduct daily review and facilitate operations  NOS Version 1.0  NSQF Level 6 | **20** | **50** |  |  | **70** |
| Module 2: Daily review and process control | 20 | 50 |  |  | 70 |
| LSC/N9701– [Business development and stakeholder relations](#BD)  NOS Version 1.0  NSQF Level 6 | **20** | **50** |  |  | **70** |
| Module 3: Business development and stakeholder relations | 20 | 50 |  |  | 70 |
| LSC/N9602 – Review performance and develop performance improvement plans  NOS Version 1.0  NSQF Level 6 | **20** | **50** |  |  | **70** |
| Module 4: Performance management system | 20 | 50 |  |  | 70 |
| LSC/N9603- Profit and loss account management and cost accounting  NOS Version 1.0  NSQF Level 6 | **20** | **50** |  |  | **70** |
| Module 5: Profit and loss account management and cost accounting | 20 | 50 |  |  | 70 |
| LSC/N0111 – Support in warehouse layout design and customs clearance  NOS Version 1.0  NSQF Level 6 | **20** | **50** |  |  | **70** |
| Module 6: Warehouse design and customs clearance | 20 | 50 |  |  | 70 |
| LSC/N0116 - Manage in-plant logistics  NOS Version 1.0  NSQF Level 6 | **20** | **50** |  |  | **70** |
| Module 7: In-plant Logistics Management | 20 | 50 |  |  | 70 |
| [LSC/N0117 Forecasting, planning and stock keeping](#NOS_C_forecast)  NOS Version 1.0  NSQF Level 6 | **20** | **50** |  |  | **70** |
| Module 8: Forecasting, Planning and Stock Keeping | 20 | 50 |  |  | 70 |
| LSC/N9908 Maintain and monitor integrity and ethics in operations  NOS Version 1.0  NSQF Level 6 | **10** | **40** |  |  | **50** |
| Module 9: Guidelines on integrity and ethics | 10 | 40 |  |  | 50 |
| LSC/N9909 Maintain and monitor health, safety and security procedures  NOS Version 1.0  NSQF Level 6 | **10** | **40** |  |  | **50** |
| Module 10: Compliance to health, safety and security norms | 10 | 40 |  |  | 50 |
| LSC/N9907 Verify and review GST application  NOS Version 1.0  NSQF Level 6 | **20** | **50** |  |  | **70** |
| Module 11: GST and it’s application | 20 | 50 |  |  | 70 |
| Total Duration | **200** | **490** |  |  | **690** |

## Elective Modules

The table lists the elective modules, their duration and mode of delivery.

**Elective 1: Automated warehouse**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| NOS and Module Details | Theory  Duration | Practical  Duration | On-the-Job Training Duration (Mandatory) | On-the-Job Training Duration (Recommended) | Total Duration |
| [LSC/N0112 Automated warehouse operations](#NOS9_E_AW)  NOS Version 1.0  NSQF Level 6 | **20** | **40** |  |  | **60** |
| Module 12: Automated warehouse management | 20 | 40 |  |  | 60 |
| Total Duration | **20** | **40** |  |  | **60** |

**Elective 2: Cold Chain Warehouse**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| NOS and Module Details | Theory  Duration | Practical  Duration | On-the-Job Training Duration (Mandatory) | On-the-Job Training Duration (Recommended) | Total Duration |
| LSC/N0113 – Cold Chain Operations  NOS Version 1.0  NSQF Level 6 | **20** | **40** |  |  | **60** |
| Module 13: Cold Chain Warehouse Management | 20 | 40 |  |  | 60 |
| Total Duration | **20** | **40** |  |  | **60** |

**Elective 3: Dry Bulk warehouse operations**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| NOS and Module Details | Theory  Duration | Practical  Duration | On-the-Job Training Duration (Mandatory) | On-the-Job Training Duration (Recommended) | Total Duration |
| LSC/N0114 – Dry Bulk warehouse operations  NOS Version 1.0  NSQF Level 6 | **20** | **40** |  |  | **60** |
| Module 14: Dry bulk warehouse management | 20 | 40 |  |  | 60 |
| Total Duration | **20** | **40** |  |  | **60** |

**Elective 4: Bonded warehouse**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| NOS and Module Details | Theory  Duration | Practical  Duration | On-the-Job Training Duration (Mandatory) | On-the-Job Training Duration (Recommended) | Total Duration |
| LSC/N0115 – Bonded warehouse operations NOS Version 1.0  NSQF Level 6 | **20** | **40** |  |  | **60** |
| Module 15: Bonded warehouse management | 20 | 40 |  |  | 60 |
| Total Duration | **20** | **40** |  |  | **60** |

**Elective 5: Multimodal operations**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| NOS and Module Details | Theory  Duration | Practical  Duration | On-the-Job Training Duration (Mandatory) | On-the-Job Training Duration (Recommended) | Total Duration |
| LSC/N1007 – Manage multimodal operations  NOS Version 1.0  NSQF Level 6 | **20** | **40** |  |  | **60** |
| Module 16: Multimodal operations management | 20 | 40 |  |  | 60 |
| Total Duration | **20** | **40** |  |  | **60** |

**Elective 6: Hub and Spoke operations**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| NOS and Module Details | Theory  Duration | Practical  Duration | On-the-Job Training Duration (Mandatory) | On-the-Job Training Duration (Recommended) | Total Duration |
| LSC/N1008 – Manage hub and spoke operations  NOS Version 1.0  NSQF Level 6 | **20** | **40** |  |  | **60** |
| Module 17: Hub and spoke Operations | 20 | 40 |  |  | 60 |
| Total Duration | **20** | **40** |  |  | **60** |

**Option Modules**

The table lists the option modules, their duration and mode of delivery.

**Option 1: Bid Process**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| NOS and Module Details | Theory  Duration | Practical  Duration | On-the-Job Training Duration (Mandatory) | On-the-Job Training Duration (Recommended) | Total Duration |
| LSC/N1135 – Bid process management NOS Version 1.0  NSQF Level 6 | **20** | **40** |  |  | **60** |
| Module 18: Bid process management | 20 | 40 |  |  | 60 |
| Total Duration | **20** | **40** |  |  | **60** |

**Module Details**

## Module 1: Introduction to Warehouse, Inventory and Transport Manager

***Mapped to Bridge Module***

**Terminal Outcomes:**

* Describe the basic structure and function of supply chain
* Detail the various functions of a warehouse, inventory and transport manager

|  |  |
| --- | --- |
| Duration: *20:00* | Duration: *10:00* |
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| * Classify the components of supply chain and logistics sector * Detail the various sub-sectors and the opportunities in them * Identify various activities in cold chain, warehousing, port yard, land, ship and air transportation * Explain job roles in warehousing and land transportation * Detail your job role as warehouse, inventory and transport manager and its interface with other job roles * Discuss the documentation requirement in warehousing and land transportation | * Identify the various MHEs and reefer vehicle equipment * Perform various operations functions of a warehouse, inventory, and transport manager |
| **Classroom Aids** | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| **Tools, Equipment and Other Requirements** | |
|  | |

## Module 2: Daily review and process control

***Mapped to LSC/N9601, v1.0***

**Terminal Outcomes:**

* Detail the steps to perform in daily review and process control as per SOP

|  |  |
| --- | --- |
| Duration: *20:00* | Duration: *50:00* |
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| * Discuss the process of approving resource allocation inspection * Explain the importance of creating daily /weekly activity plan * Detail the ways to resolve interdepartmental issues * Illustrate the ways to achieve optimal utilization of resources * Explain the need to have a cohesive working environment between clients and organisation * Detail the ways to analyse business performance trends and forecasts * Discuss the way to prepare budgets as per SOP * State the relevant state/ country and international laws and regulations * Detail the standards for handling hazardous goods | * Analyse the previous day’s performance to chart the plan of action * Approve resource allocation post inspection of pending activities for the day * Prepare daily/ weekly activity plan * Resolve interdepartmental queries and issues * Assess optimal utilisation of all available resources * Identify training and development needs * Create a cohesive working environment between clients and organisation * Analyse business performance trends and forecasts * Prepare budgets for various operations * Review compliance to relevant state/ country and international laws and regulations * Plan corrective and preventive actions to improve outcome of business activities * Assess compliance to hazardous goods handling standards |
| **Classroom Aids** | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| **Tools, Equipment and Other Requirements** | |
| Computer, Management information system (MIS), Enterprise Resource Planning (ERP), performance review software, budgeting and forecasting software, stationery, worksheets, SOP etc | |

## Module 3: Business development and stakeholder relations

***Mapped to LSC/N9701, V1.0***

**Terminal Outcomes:**

* Detail the steps to be followed for business development

|  |  |
| --- | --- |
| Duration: *20:00* | Duration: *50:00* |
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| * List target population to approach for business development * Explain the process of assessing prospective clients * Discuss client requirements * Plan customised or bundled solutions based on sales pitch * Demonstrate effective oral and written business communication * Detail the procedure for preparing costing sheets for service delivery * Demonstrate usage of ERP for updating client data * Assess when to upsell and cross-sell services to existing clients * Describe the nuances in building rapport with clients, customs, government agencies, insurance for healthy relationship * Discuss the process of writing service level agreements | * Identify target population to approach for business development * Assess prospective clients * Identify client requirements * Offer customised or bundled solutions based on sales pitch * Demonstrate effective oral and written business communication * Prepare costing sheets for service delivery * Use ERP for updating client data * Estimate when to upsell and cross-sell services to existing clients * Establish rapport with clients, customs, government agencies, insurance for healthy relationship * Prepare service level agreements * Schedule resources as per operational requirement |
| **Classroom Aids** | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| **Tools, Equipment and Other Requirements** | |
| MS Project, MS Office, Computer, Projector, TV, Stationery, Worksheets, Reefer vehicle, loading dock, MHE equipment such as pallet trucks &, forklifts, pallets, crates, sample products, weighing tables, standard formats, temperature control systems, PPE etc. | |

## Module 4: Performance management system

***Mapped to LSC/N9602, v1.0***

**Terminal Outcomes:**

* Detail the appropriate steps for performance management as per SOP

|  |  |
| --- | --- |
| Duration: *20:00* | Duration: *50:00* |
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| * Define performance measurement metrics for assigned activities * Explain performance review process * Explain root cause analysis for non-performing areas * Discuss the importance of performance improvement plan * Define KPIs as per organisational metrics and expectations * Explain effective ways for resolving employee grievances | * Establish performance measurement metrics for assigned activities * Demonstrate performance review process * Perform root cause analysis for non-performing areas * Develop corrective and preventive actions to avoid recurrence * Design performance improvement plan * Communicate performance improvement plan * Establish the KPIs as per organisational metrics and expectations * Examine employee grievances and undertake corrective actions |
| **Classroom Aids** | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| **Tools, Equipment and Other Requirements** | |
| MS Office  compressor, condenser, evaporator, temperature and humidity sensor, simulator, tools and tackles, consumables, cold storage equipment, gas leak detectors, electrical systems, start relays and defrost timers, pressure pumps, etc. | |

## Module 5: Profit and loss account management and cost accounting

***Mapped to LSC/N9603, v1.0***

**Terminal Outcomes:**

* Demonstrate the process of profit and loss account management and cost accounting

|  |  |
| --- | --- |
| Duration: *20:00* | Duration: *50:00* |
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| * Describe P&L analysis process * Explain budgeting and monitoring process * Explain methods to analyse variance between budget and actual expenditure * Compare budget with actual physical output * Detail the procedure for making budget amendments * List the risk management procedures * Detail the procedure for performing Activity Based Costing (ABC) * Discuss the audit process to identify reasons for deviation from costing * Explain the process to rationalize cost by undertaking improvement activities | * Perform P&L analysis * Perform budgeting and monitoring process * Analyse variance between budget and actual expenditure * Cross check budget with actual physical output * Prepare budget amendments * Demonstrate risk management procedures * Perform Activity Based Costing (ABC) * Perform audit to identify reasons for deviation from costing * Implement improvement activities to rationalize cost |
| **Classroom Aids** | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| **Tools, Equipment and Other Requirements** | |
| MS Office  compressor, condenser, evaporator, temperature and humidity sensor, simulator, tools and tackles, consumables, cold storage equipment, gas leak detectors, electrical systems, start relays and defrost timers, pressure pumps, etc. | |

## Module 6: Warehouse design and customs clearance

***Mapped to LSC/N0111, v1.0***

**Terminal Outcomes:**

* Detail the steps to be performed for designing the warehouse

|  |  |
| --- | --- |
| Duration: *20:00* | Duration: *50:00* |
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| * Detail the process of designing the layout for different types of goods such as Fast Moving Consumer Goods (FMCG) products, electronics and appliances, automotive and assembly line products, bulk cargo, etc * Detail prioritisation of goods placement location within a warehouse * Describe the precautions and signages to be used while storing hazardous goods * Explain the design process, equipment and manpower movement flow in the warehouse * Detail the method of analysing technology feasibility of the proposed designs * Detail the coordination requirements with clients, custom officials, custom brokers, transport brokers, International Air Transport Association (IATA) agents, etc. for customs clearance requirements | * Design the process layout for different types of goods such as Fast Moving Consumer Goods (FMCG) products, electronics and appliances, automotive and assembly line products, bulk cargo, etc * Demonstrate prioritisation of goods placement location within a warehouse * Exhibit the precautions and signages to be used while storing hazardous goods * Design process, equipment and manpower movement flow in the warehouse * Identify the right temperature, humidity and other requirements as per product category * Analyse technology feasibility of the proposed designs * Support during construction, commissioning and performance reporting of warehouse * Perform effective coordination with clients, custom officials, custom brokers, transport brokers, International Air Transport Association (IATA) agents, etc. for customs clearance requirements |
| **Classroom Aids** | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| **Tools, Equipment and Other Requirements** | |
| Computer, Enterprise Resource Planning (ERP), warehouse design software, inventory models, stationery, SOP etc.. | |

## Module 7 : In-plant logistics management

***Mapped to LSC/N0116, v1.0***

**Terminal Outcomes:**

* Illustrate the various steps be performed for managing in plant logistics

|  |  |
| --- | --- |
| Duration: *20:00* | Duration: *50:00* |
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| * Explain the methodology to prepare Material Requirement Plan (MRP), despatch/ Distribution Requirement Plan (DRP), and budget * Discuss the process of preparing indents for material receipt/ procurement * Detail the process of allocating storage locations based on goods volume * Detail the various steps for approving material movement | * Analyse Material Requirement Plan (MRP), despatch/ Distribution Requirement Plan (DRP), and budget for procurement to assess material requirement * Prepare indents for material receipt/ procurement * Plan workforce, equipment and MHE resources for storage, handling and movement of material * Analyse material receipts, documentation and gate passes to approve invoicing * Manage inventory count and review stock inspection records * Allocate storage locations based on goods volume * Manage goods movement between multiple storage locations * Assess production, sales and despatch team requirement for material movement * Verify transfer orders, despatch orders and material issue in MMS for approving movement |
| **Classroom Aids** | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| **Tools, Equipment and Other Requirements** | |
| MS Project, MS Office, Computer, Projector, TV, Stationery, Worksheets, Statistical Tools  compressor, condenser, evaporator, temperature and humidity sensor, simulator, tools and tackles, consumables | |

## Module 8 : Forecasting, Planning and Stock Keeping

***Mapped to LSC/N0117, v1.0***

**Terminal Outcomes:**

* Demonstrate the process of forecasting, planning and stock keeping as per SOP

|  |  |
| --- | --- |
| Duration: *20:00* | Duration: *50:00* |
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| * Explain the process of analysing past trends of material movement * Explain the methodology of preparing Material Requirement Plan (MRP) * Discuss Kanban and Just In Time inventory schedules * Discuss the importance for measuring adequate availability of stock as per Kanban requirements * Detail the steps to be followed for timely procurement of stock | * Analyse past trends of material movement * Prepare Material Requirement Plan (MRP) based on current requirement for weekly, monthly and quarterly demand * Communicate MRP to stakeholders * Plan Kanban and Just In Time inventory schedules * Assess adequate availability of stock as per Kanban requirements * Arrange for disposal or quarantine of old or damaged stock * Arrange for timely procurement of stock |
| **Classroom Aids** | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| **Tools, Equipment and Other Requirements** | |
| Computers, Enterprise Resource Planning (ERP), Material Handling Equipment (MHEs), inventory models, stationery, Personal Protective Equipment (PPEs) etc | |

## Module 9 : Guidelines on integrity and ethics

***Mapped to LSC/N9908, v1.0***

**Terminal Outcomes:**

* Explain the concepts of integrity, ethics
* Detail the various regulatory requirements related to logistics industry

|  |  |
| --- | --- |
| Duration: *10:00* | Duration: *40:00* |
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| * Describe the concepts of integrity, ethics * Detail the various regulatory requirements related to logistics industry * Explain data and information security practices * Discuss corrupt practices * Discuss regulatory requirements, code of conduct and etiquettes * Detail the procedure for documenting all integrity and ethics violations * Explain escalation matrix for reporting deviation | * Practice the principles of integrity and ethics * Follow the various regulatory requirements related to logistics industry * Perform data and information security practices * Identify corrupt practices * Comply to regulatory requirements * Practice code of conduct and etiquettes * Document all integrity and ethics violations * Report deviation as per the escalation matrix |
| **Classroom Aids** | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| **Tools, Equipment and Other Requirements** | |
| SOP, worksheets, computer, projector, printer, display board and markers | |

## Module 10: Compliance to health safety and security norms

***Mapped to LSC/N9909, v1.0***

**Terminal Outcomes:**

* Describe health, safety, and security procedures in warehouse
* Demonstrate the inspection procedure to ensure appropriate and safe conditions of activity area and equipment
* Illustrate the standard protocol to be followed during emergency situations, accidents and breach of safety

|  |  |
| --- | --- |
| Duration: *10:00* | Duration: *40:00* |
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| * Detail health, safety and security procedures in warehouse * Describe the 5S to be followed * Explain the inspection procedure to ensure appropriate and safe conditions of activity area and equipment * Discuss unsafe working conditions * Describe the inspection procedure to check safe handling of hazardous goods * Discuss the standard protocol to be followed during emergency situations, accidents and breach pf safety * Document health, safety and security violations * Explain the escalation matrix for reporting deviation | * Follow health, safety and security procedures in warehouse * Implement 5S at workplace * Inspect the activity area and equipment, for appropriate and safe conditions * Identify unsafe working conditions * Inspect adherence to standard operating procedures (SOP) while handling dangerous and hazardous goods * Implement standard protocol in case of emergency situations, accidents, and breach of safety * Prepare report on health, safety and security violations * Report deviation as per the escalation matrix |
| **Classroom Aids** | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| **Tools, Equipment and Other Requirements** | |
| PPE, MHE, instructional material, alarms, safety guidelines, safety signs, computer, projector etc. | |

## Module 11 : GST and it’s application

***Mapped to LSC/N9907, v1.0***

**Terminal Outcomes:**

* Demonstrate the GST application procedure as per SOP

|  |  |
| --- | --- |
| Duration: *20:00* | Duration: *50:00* |
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| * Describe the GST application procedure in invoicing process * Detail the rules and regulation in applying and reversing GST * Inspect to identify faults in a document with GST computation * Describe GST documents approval process * Examine for pending litigation from previous regime * Review monthly returns for compliance to regulations * Examine correctness of tax payment records and acknowledgements received | * Prepare the GST application for invoicing process * Examine faults in a document with GST computation * Perform all activities for GST documents approval process * Examine for pending litigation from previous regime * Review monthly returns for compliance to regulations * Examine correctness of tax payment records and acknowledgements received |
| **Classroom Aids** | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| **Tools, Equipment and Other Requirements** | |
| Laptop, MS office, ERP, stationery, worksheets, computer, projector, GST guidelines etc. | |

## 

## Module 12: Automated warehouse management

***Mapped to LSC/N0112, v1.0***

**Terminal Outcomes:**

* Demonstrate the steps to be followed for effective management of automated warehouse

|  |  |
| --- | --- |
| Duration: *20:00* | Duration: *40:00* |
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| * List the parameters to be analysed to design the automated warehouse * Detail the requirements for automated devices such as Automatic Storage and Retrieval Systems (ASRS), automated racking, Automated Guided Vehicle (AGV), automated packaging system, robotic palletisation and depalletization, product profiling systems, product identification systems and other equipment to be used * Design collision free routes * Explain storage racks and pallets selection process * Explain the standard operating procedures to operate and maintain automated warehouse equipment * Detail the maintenance requirements of automated warehouse equipment * Explain utilisation analysis of automated warehouse assets * Describe automated warehouse redesign process to adapt to changing customer needs | * Analyse types of products being stored, their volume, turn-around time and other business requirements to design the automated warehouse * Assess requirements for automated devices such as Automatic Storage and Retrieval Systems (ASRS), automated racking, Automated Guided Vehicle (AGV), automated packaging system, robotic palletisation and depalletization, product profiling systems, product identification systems and other equipment to be used * Propose conveyor, AGV & MHE movement & merging routes * Design collision free routes * Exhibit storage racks and pallets selection process * Use RFID grid to map the warehouse * Perform the standard operating procedures to operate and maintain automated warehouse equipment * Demonstrate the maintenance requirements of automated warehouse equipment * Perform utilisation analysis of automated warehouse assets * Demonstrate automated warehouse redesign process to adapt to changing customer needs * Review operational parameters, challenges, accidents, system failures etc. to implement preventive and corrective actions |
| **Classroom Aids** | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| **Tools, Equipment and Other Requirements** | |
| Computer, enterprise resource planning (ERP), warehouse design software, inventory models, stationery, SOP, MS Office, bar code readers, pallets, MHE, RFID and its software etc. | |

## Module 13: Cold chain warehouse management

***Mapped to LSC/N0113, v1.0***

**Terminal Outcomes:**

* Demonstrate the steps to be followed for effective cold chain warehouse management

|  |  |
| --- | --- |
| Duration: *20:00* | Duration: *40:00* |
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| * List the parameters to be analysed to design the cold storage warehouse * Discuss the factors to be considered for designing warehouse layout and storage location * Detail the safe storage standards for refrigerant and gasses (ethylene etc.) * State the temperature, humidity and product handling standards as per SOP * Detail the process of segregation, sorting, grading and ripening operations as per product requirements and SOP * Discuss the HACCP and HAZMAT regulations for different types of goods to provide inputs * Describe the operational fitness requirements of various equipment in cold chain warehouse * Detail the safety requirements to be followed for various types of products * Detail the compliance requirements of reefer vehicle operations * State the cold chain warehouse operational metrics relating to employee operations, work completion status, temperature maintenance, resource utilized, down time etc. | * Analyse types of products being stored, their volume, turn-around time and other business requirements to design the cold chain warehouse * Design warehouse layout and storage location to comply with the various storage and temperature requirements for different products * Assess safe storage of refrigerant and gasses (ethylene etc.) * Plan for evacuation routes, storage racks, pallets, and other equipment in cold chain warehouse * Monitor compliance to temperature, humidity and product handling as per SOP * Assess compliance of segregation, sorting, grading and ripening operations as per product requirements and SOP * Analyse implementation of HACCP and HAZMAT regulations for different types of goods to provide inputs * Check the operational fitness requirements of various equipment in cold chain warehouse * Demonstrate the safety requirements to be followed for various types of products * Monitor compliance of reefer vehicle operations to temperature and delivery timelines * Prepare reports on cold chain warehouse operational metrics relating to employee operations, work completion status, temperature maintenance, resource utilized, down time etc. |
| **Classroom Aids** | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| **Tools, Equipment and Other Requirements** | |
| ERP, MS Office, cold storage facility, temperature control systems, HACCP and HAZMAT guidelines, stationery, demarcation equipment, SOP, computer, projector, worksheets, etc | |

## Module 14: Dry bulk warehouse management

***Mapped to LSC/N0114, v1.0***

**Terminal Outcomes:**

* Demonstrate the steps to be followed for effective management of dry bulk warehouse

|  |  |
| --- | --- |
| Duration: *20:00* | Duration: *40:00* |
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| * List the parameters to be analysed to design the dry bulk warehouse * Detail the method to plan the right storage method based on temperature, humidity and other conditions required * State the factors on which the storage site depends * State the standards for safe handling of MHE equipment * Detail the handling and storage safety requirements to be followed for various types of products * Detail the process to reduce product loss by analysing pest/rodent control measure, spillages/breakages and implementing necessary preventive and corrective actions * Explain the various operational metrics relating to employee operations, work completion status, resource utilized, down time, spillages etc. | * Analyse product/commodity nature, volume, turn-around time and other business requirements to design the dry bulk warehouse * Plan the right storage method based on temperature, humidity and other conditions required * Assess storage site based on   + ground condition and suitability   + cargo size, weight, height and size of stows/heaps   + electrical installations   + stack integrity and product flow dynamics   + arrangements for both operational and emergency situations, traffic, requirements for permanent or movable bulk walls and maintenance cleaning requirements   + likely vehicle fumes in bulk storage areas   + other operational units in the vicinity   + type of equipment going to be deployed * Propose layout and routes for safe handling of MHE equipment * Plan systems to continuously monitor cargo volume and warehouse utilisation * Demonstrate handling and storage safety requirements to be followed for various types of products * Minimise product loss by analysing pest/rodent control measure, spillages/breakages and implementing necessary preventive and corrective actions * Prepare reports on dry bulk warehouse operational metrics relating to employee operations, work completion status, resource utilized, down time, spillages etc. |
| **Classroom Aids** | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| **Tools, Equipment and Other Requirements** | |
| ERP, MS Office, stationery, demarcation equipment, MHE and conveyor controls, SOP, computer, projector, worksheets, etc. | |

## Module 15 : Bonded warehouse management

***Mapped to LSC/N0115, v1.0***

**Terminal Outcomes:**

* Demonstrate the steps to be followed for effective bonded warehouse management

|  |  |
| --- | --- |
| Duration: *20:00* | Duration: *40:00* |
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| * Explain the importance of assessing site fitness for bonded * Detail the bonded warehouse layout regulations * Detail the standards for safe handling of MHE equipment * Explain the documentation to be maintained in bonded warehouse * Describe the relationship to be maintained with customs, brokers, transporters, clients, IATA agents, insurance agents etc for timely inspection, customs clearance and delivery of goods * Explain dispute resolution and grievance redressal process in-case of any discrepancies in export/import documentation * State the legal regulations governing bonded warehouses | * Assess site fitness for bonded warehouse in terms of industrial development, licenses, products handled, turnaround time, etc. * Inspect compliance of design to regulations * Propose layout and routes for safe handling of MHE equipment * Plan systems to continuously monitor cargo flow and warehouse utilisation * Prepare documentation to be maintained in bonded warehouse * Prepare bonds for goods stored in warehouse * Establish good relationship with customs, brokers, transporters, clients, IATA agents, insurance agents etc for timely inspection, customs clearance, and delivery of goods * Demonstrate dispute resolution and grievance redressal process in-case of any discrepancies in export/import documentation * Review operational parameters, challenges, equipment maintenance, asset utilisation, accidents etc to implement preventive and corrective actions * Apply opportune changes or updates in accordance to the legal regulations governing bonded warehouse |
| **Classroom Aids** | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| **Tools, Equipment and Other Requirements** | |
| ERP, MS Office, stationery, demarcation equipment, SOP, computer, projector, customs documentation, worksheets, etc. | |

## Module 16 : Multimodal operations management

***Mapped to LSC/N1007, v1.0***

**Terminal Outcomes:**

* Demonstrate the steps to be followed for effective multimodal operations management

|  |  |
| --- | --- |
| Duration: *20:00* | Duration: *40:00* |
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| * Detail the advantages of using multimodal transport * Discuss the process of selecting multimodal transport based on cargo type * Explain the process of planning sequential multimodal route to be taken based on delivery, timeline and cost considerations * Discuss the parameters for the selection of transporters * Describe the coordination activities to be undertaken with port authorities, railways, Inland Container Depot (ICDs), custom officials, airport authority for required clearances, documents and aligning timeliness for trans-shipment * Describe the way to assesses business and P& performance | * Assess the multimodal transport requirements for the cargo type * Analyse the air, ocean, inland waterway, rail and road routes possible to transport the cargo * Plan the sequential multimodal route to be taken based on delivery, timeline and cost considerations * Explain multimodal transport plan to stakeholders * Assess availability and cost effectiveness of transporters to undertake the movement * Demonstrate the coordination activities to be undertaken with port authorities, railways, Inland Container Depot (ICDs), custom officials, airport authority for required clearances, documents and aligning timeliness for trans-shipment * Plan resource allocation for various activities * Review compliance of activities to timelines, budget and other transportation metrics * Assess business and P&L performance to undertaken improvement initiatives |
| **Classroom Aids** | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| **Tools, Equipment and Other Requirements** | |
| ERP, MS Office, stationery, demarcation equipment, SOP, computer, projector, customs documentation, worksheets, etc. | |

## 

## Module 17 : Hub and spoke operations management

***Mapped to LSC/N1008, v1.0***

**Terminal Outcomes:**

* Demonstrate the steps to be followed for effective hub and spoke operations management

|  |  |
| --- | --- |
| Duration: *20:00* | Duration: *40:00* |
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| * Detail the various work plans to be analysed on a daily basis * Discuss the procedure for effective allocation of resources * Discuss dispute resolution procedure with vendors, shippers and other stakeholders * Inspect documentation for correctness * Review insurance documentation for compliance to requirements * Detail various preventive and corrective actionsAnalyse daily reports to undertaken preventive and corrective action | * Analyse daily work plan for for execution of hub activities {sorting/ packing/ labelling/ aggregating/ break-bulk/ container loading (Less than Container Load (LCL)/ Full Container Load (FCL))/ forwarding} * Approve resource allocation based on work plan * Discuss dispute resolution procedure with vendors, shippers and other stakeholders * Inspect documentation for correctness * Review insurance documentation for compliance to requirements * Analyse daily reports to undertaken preventive and corrective action |
| **Classroom Aids** | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| **Tools, Equipment and Other Requirements** | |
| ERP, MS Office, stationery, demarcation equipment, SOP, computer, projector, customs documentation, worksheets, etc. | |

## 

## Module 18: Bid process management

***Mapped to LSC/N9702, v1.0***

**Terminal Outcomes:**

* Demonstrate the steps for bid process management as per SOP

|  |  |
| --- | --- |
| Duration: *20:00* | Duration: *40:00* |
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| * Describe activities to identify new business proposals * Detail the methodology of analysing technical requirement of the tender specification as mentioned in the Request for Proposal (RFP) * Explain the process of conducting preliminary feasibility study and cost analysis of the tender based on CAPEX and OPEX requirements * Describe work allocation to various internal teams for proposal preparation * Calculate CAPEX, OPEX, project quote * Explain the reviewing process of proposal for compliance to all tender requirements * Discuss the process for client relationship management | * Identify new business proposals as per SOP * Analyse technical requirement of the tender specification as mentioned in the Request for Proposal (RFP) * Prepare preliminary feasibility study and cost analysis of the tender based on CAPEX and OPEX requirements * Review queries on bid scope with client * Allocate work to various internal teams for proposal preparation * Prepare CAPEX, OPEX, project quote in discussion with engineering, procurement, implementation, operations, HR and finance team * Review the proposal for compliance to all tender requirements * Establish good relationship with clients |
| **Classroom Aids** | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| **Tools, Equipment and Other Requirements** | |
| Computer, Enterprise Resource Planning (ERP), MS office, stationery, worksheets, SOP etc | |

# 

# Annexure

## Trainer Requirements

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Trainer Prerequisites | | | | | | |
| Minimum Educational Qualification | **Specialization** | **Relevant Industry Experience** | | **Training Experience** | | **Remarks** |
| ***Years*** | ***Specialization*** | ***Years*** | ***Specialization*** |  |
| Graduate | Warehousing | 4 | Warehousing | 1 | Warehousing |  |

|  |  |
| --- | --- |
| Trainer Certification | |
| Domain Certification | **Platform Certification** |
| Certified for Job Role: “Warehouse, inventory and Transport Manager” mapped to QP: “LSC/Q0105, v1.0”. Minimum accepted score is 80% | Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “MEP/Q2601”. Minimum accepted score is 80% |

## Assessor Requirements

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Assessor Prerequisites | | | | | | |
| Minimum Educational Qualification | **Specialization** | **Relevant Industry Experience** | | **Training/Assessment Experience** | | **Remarks** |
| ***Years*** | ***Specialization*** | ***Years*** | ***Specialization*** |  |
| Graduate | Warehousing | 4 | Warehousing | 1 | Warehousing |  |

|  |  |
| --- | --- |
| Assessor Certification | |
| Domain Certification | **Platform Certification** |
| Certified for Job Role: “Warehouse, Inventory and Transport Manager ” mapped to QP: “LSC/Q0105, v1.0”. Minimum accepted score is 80% | Recommended that the Assessor is certified for the Job Role: “Assessor”, mapped to the Qualification Pack: “MEP/Q2601”. Minimum accepted score is 80% |

## 

## Assessment Strategy

The emphasis is on ‘learning-by-doing' and practical demonstration of skills and knowledge based on the performance criteria. Accordingly, assessment criteria for each job role is set and made available in qualification pack.

The assessment papers for both theory and practical would be developed by Subject Matter Experts (SME) hired by Logistics Sector Skill Council or with the LSC accredited Assessment Agency as per the assessment criteria mentioned in the Qualification Pack. The assessments papers would also be checked for the various outcome-based parameters such as quality, time taken, precision, tools & equipment requirement etc.

Each NOS in the Qualification Pack (QP) is assigned a relative weightage for assessment based on the criticality of the NOS. Therein each Element/Performance Criteria in the NOS is assigned marks on relative importance, criticality of function and training infrastructure.

The following tools would be used for final assessment:

1. **Practical Assessment:** This comprises of a creation of mock environment in the skill lab which is equipped with all equipment required for the qualification pack.

Candidate's soft skills, communication, aptitude, safety consciousness, quality consciousness etc. is ascertained by observation and marked in observation checklist. The outcome is measured against the specified dimensions and standards to gauge the level of their skill achievements.

1. **Viva/Structured Interview:** This tool is used to assess the conceptual understanding and the behavioral aspects with regard to the job role and the specific task at hand. It also includes questions on safety, quality, environment, and equipment etc.
2. **On-Job Training:** OJT would be evaluated based on standard log book capturing departments worked on, key observations of learner, feedback and remarks of supervisor or mentor.
3. **Written Test:** Question paper consisting of 100 MCQs (Hard:40, Medium:30 and Easy: 30) with questions from each element of each NOS. The written assessment paper is comprised of following types of questions:
   1. True / False Statements
   2. Multiple Choice Questions
   3. Matching Type Questions
   4. Fill in the blanks
   5. Scenario based Questions
   6. Identification Questions

**QA Regarding Assessors:**

Assessors are selected as per the “eligibility criteria” laid down by LSC for assessing each job role. The assessors selected by Assessment Agencies are scrutinized and made to undergo training and introduction to LSC Assessment Framework, competency based assessments, assessors guide etc. LSC conducts “Training of Assessors” program from time to time for each job role and sensitize assessors regarding assessment process and strategy which is outlined on following mandatory parameters:

* + 1. Guidance regarding NSQF
    2. Qualification Pack Structure
    3. Guidance for the assessor to conduct theory, practical and viva assessments
    4. Guidance for trainees to be given by assessor before the start of the assessments.
    5. Guidance on assessments process, practical brief with steps of operations practical observation checklist and mark sheet
    6. Viva guidance for uniformity and consistency across the batch.
    7. Mock assessments
    8. Sample question paper and practical demonstration

# References

## Glossary

|  |  |
| --- | --- |
| Term | Description |
| Key Learning Outcome | Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application). |
| OJT (M) | On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site |
| OJT (R) | On-the-job training (Recommended); trainees are recommended the specified hours of training on site |
| Training Outcome | Training outcome is a statement of what a learner will know, understand and be able to do **upon** **the** **completion of the training**. |
| Terminal Outcome | Terminal outcome is a statement of what a learner will know, understand and be able to do **upon the completion of a module.** A set of terminal outcomes help to achieve the training outcome. |

## Acronyms and Abbreviations

|  |  |
| --- | --- |
| Term | Description |
| QP | Qualification Pack |
| NSQF | National Skills Qualification Framework |
| NSQC | National Skills Qualification Committee |
| NOS | National Occupational Standards |