# Model Curriculum

**QP Name: Warehouse Manager**

**(Electives –Automated Warehouse/ Cold Chain Warehouse/ Dry Bulk Warehouse/ Bonded Warehouse)**

**QP Code: LSC/Q0103**

**QP Version: 3.0**

**NSQF Level: 6**

**Model Curriculum Version: 3.0**

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# Training Parameters

| | |
|---|---|
| **Sector** | Logistics |
| **Sub-Sector** | Warehousing (Storage and Packaging) |
| **Occupation** | Warehousing operations, packaging, documentation and reporting |
| **Country** | India |
| **NSQF Level** | 6 |
| **Aligned to NCO/ISCO/ISIC Code** | NCO-2015/ 1324.1200 and ISCO-08/1324 |
| **Minimum Educational Qualification and Experience** | Completed 4 year UG or equivalent with 2 years of relevant experience in warehousing<br>OR<br>Completed 3 year UG with 3 years of relevant experience in warehousing<br>OR<br>Completed 3 year diploma after 10th with 5 years of relevant experience in warehousing<br>OR<br>Previous relevant Qualification of NSQF Level 5 with 3 Years of relevant experience in warehousing |
| **Pre-Requisite License or Training** | NA |
| **Minimum Job Entry Age** | 23 |
| **Last Reviewed On** | 07/10/2025 |
| **Next Review Date** | 07/10/2028 |
| **NSQC Approval Date** | 07/10/2025 |
| **QP Version** | 3.0 |
| **Model Curriculum Creation Date** | 07/10/2025 |
| **Model Curriculum Valid Up to Date** | 07/10/2028 |
| **Model Curriculum Version** | 3.0 |
| **Minimum Duration of the Course** | 600 |
| **Maximum Duration of the Course** | 780 |

# 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 with 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
- Comply with workplace integrity, ethical and regulatory practices.
- Manage the workplace for a safe and healthy work environment by following and ensuring compliance with regulatory and safety norms
- 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

## 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 – Review and facilitate daily operations V4.0 NSQF Level 6** | **20** | **35** | **5** | | **60** |
| Module 2: Daily review and process control | 20 | 35 | 5 | | 60 |
| **LSC/N9701– Manage Business and stakeholder relations V4.0 NSQF Level 6** | **20** | **35** | **5** | | **60** |
| Module 3: Business development and stakeholder relations | 20 | 35 | 5 | | 60 |

| NOS and Module Details | Theory | Practical | On-the-Job | | Total |
|---|---|---|---|---|---|
| **LSC/N9914 – Manage Operations and Employee Performance**<br>**V1.0**<br>**NSQF Level 6** | **20** | **35** | **5** | | **60** |
| Module 4: Operations and Employee Performance management | 20 | 35 | 5 | | 60 |
| **LSC/N9603- Profit and loss account management and cost accounting**<br>**V3.0**<br>**NSQF Level 6** | **20** | **35** | **5** | | **60** |
| Module 5: Profit and loss account management and cost accounting | 20 | 35 | 5 | | 60 |
| **LSC/N0111 – Support in warehouse layout design**<br>**V3.0**<br>**NSQF Level 6** | **20** | **35** | **5** | | **60** |
| Module 6: Warehouse Layout Designing | 20 | 35 | 5 | | 60 |
| **LSC/N0139 - Optimise and continuously improve warehouse operations**<br>**V1.0**<br>**NSQF Level 6** | **20** | **35** | **5** | | **60** |
| Module 7: Warehouse optimisation and Continuous improvement | 20 | 35 | **5** | | 60 |
| **LSC/N9911: Follow health, safety, and security procedures and maintain integrity and ethics at the workplace**<br>**V1.0**<br>**NSQF Level 6** | **20** | **40** | | | **60** |
| Module 8: Health, safety, security, integrity and ethics at the workplace. | 20 | 40 | | | 60 |
| **Employability Skills**<br>**DGT/VSQ/N0103** | **30** | **60** | | | **90** |
| **Total Duration** | **190** | **320** | **30** | | **540** |

## 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**<br>**V3.0**<br>**NSQF Level 6** | **30** | **30** | | | **60** |
| Module 12: Automated warehouse operations | 30 | 30 | | | 60 |
| **Total Duration** | **30** | **30** | | | **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 V3.0 NSQF Level 6** | **30** | **30** | | | **60** |
| Module 12: Cold chain operations | 30 | 30 | | | 60 |
| **Total Duration** | **30** | **30** | | | **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 V5.0 NSQF Level 6** | **30** | **30** | | | **60** |
| Module 12: Dry bulk warehouse operations | 30 | 30 | | | 60 |
| **Total Duration** | **30** | **30** | | | **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 V5.0 NSQF Level 6** | **30** | **30** | | | **60** |
| Module 12: Bonded warehouse operations | 30 | 30 | | | 60 |
| **Total Duration** | **30** | **30** | | | **60** |

# Module Details

## Module 1: Introduction to Warehouse Manager
### *Mapped to Bridge Module*

**Terminal Outcomes:**

- Describe the basic structure and function of the supply chain
- Detail the various functions of a warehouse manager

| Duration: *20:00* | Duration: *10:00* |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| <ul><li>Detail the various sub-sectors and the opportunities in them</li><li>Identify various activities in cold chain, warehousing, port yard, land, ship and air transportation</li><li>Explain job roles in warehousing</li><li>Detail the roles and responsibilities of a warehouse manager.</li><li>Discuss the documentation requirements in the warehouse</li></ul> | <ul><li>Classify the components of supply chain and logistics sector</li><li>Identify the various MHEs used in the warehouse</li><li>Perform various operations functions of a warehouse manager</li><li>Demonstrate your job role as a warehouse manager and interface with other job roles</li></ul> |
| **Classroom Aids** ||
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser ||
| **Tools, Equipment and Other Requirements** ||
| Computers with MS office, WMS(Learning version), LLMS (Learning version) ||

## Module 2: Daily review and process control
*Mapped to LSC/N9601, V4.0*

**Terminal Outcomes:**

- Detail the steps to perform in daily review and process control as per SOP
- Monitor and ensure that operations comply with legal, regulatory, and organisational policies.

| Duration: *20:00* | Duration: *35:00* |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| <ul><li>Discuss the importance of reviewing daily work agendas, prioritising tasks, and updating the team on objectives and key metrics.</li><li>Explain the procedures for identifying pending tasks, resolving issues, and escalating unresolved matters to senior management or external consultants.</li><li>Detail the processes for assessing the utilisation of resources, adjusting budgets, and ensuring resource availability.</li><li>Explain how to assess the previous day's performance, identify bottlenecks, and resolve operational challenges.</li><li>Elaborate on forecasting trend patterns, setting up work plans, and preparing resource budgets in alignment with operations.</li></ul> | <ul><li>Illustrate the day's priorities, communicate updates, and address any challenges or special tasks.</li><li>Review the previous day's inspection and output reports to identify pending tasks and take necessary actions to approve or resolve them.</li><li>Approve and allocate resources according to the daily, weekly, and monthly work plans.</li><li>Troubleshoot operational issues from the previous day, such as delays or bottlenecks, and resolve them promptly.</li><li>Monitor and ensure that operations comply with legal, regulatory, and organisational policies.</li></ul> |
| **Classroom Aids** ||
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser ||
| **Tools, Equipment and Other Requirements** ||
| WMS (LEARNING VERSION), 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, V4.0*

**Terminal Outcomes:**

- Detail the steps to be followed for business development
- Explain the process of preparing and implementing a sales plan, including identifying new client acquisition strategies and setting clear sales targets.

| **Duration**: *20:00* | **Duration**: *35:00* |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| <ul><li>Describe how to gather market intelligence by staying updated with service offerings and industry developments to identify potential business opportunities.</li><li>Explain the process of preparing and implementing a sales plan, including identifying new client acquisition strategies and setting clear sales targets.</li><li>Discuss how to identify and analyse client business needs and offer customised and bundled solutions that align with those needs.</li><li>Detail the essential principles of negotiating terms with clients, closing deals, and collecting the necessary client details, such as organisational and payment information.</li><li>Elaborate on the importance of maintaining strong, long-term client relationships through regular communication, feedback collection, and the provision of value-added services.</li></ul> | <ul><li>Prepare and implement a sales plan for acquiring new clients, including tracking targets and ensuring follow-up actions are performed effectively.</li><li>Practice meeting clients to present new services, take feedback on existing ones, and offer tailored solutions to meet their needs.</li><li>Use a company's sales database to obtain and manage lists of existing clients and new prospects, prioritising them for outreach based on previous relationship-building efforts.</li><li>Negotiate with clients on cost, finalize contracts, and ensure proper collection of organizational and payment details to ensure a smooth deal closure.</li><li>Interact regularly with clients through phone calls, emails, or visits to address queries, resolve grievances, and provide updates about new offerings and discounts.</li></ul> |

| **Classroom Aids** |
|---|
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser |

| **Tools, Equipment and Other Requirements** |
|---|
| WMS (LEARNING VERSION), Computer, Management information system (MIS), Enterprise Resource Planning (ERP), performance review software, budgeting and forecasting software, stationery, worksheets, SOP etc |

## Module 4: Operations and Employee Performance Management.
### *Mapped to LSC/N9914, V1.0*

**Terminal Outcomes:**

- Detail the appropriate steps for performance management as per SOP
- Elaborate the methods and processes for providing leadership and direction

| Duration: *20:00* | Duration: *35:00* |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| <ul><li>Describe how to analyse key performance metrics, such as asset utilisation rates, revenue per workforce, and operational efficiency indicators.</li><li>Explain how to examine reasons behind non-performance and identify underlying factors, such as delays or defaults, impacting the operational performance of different departments.</li><li>Discuss identifying areas for process improvement and determining training needs based on operational performance trends.</li><li>Detail the importance of developing and implementing action plans to improve overall worker and operational efficiency, with a focus on resource utilisation.</li><li>Elaborate on how to set key performance indicators (KPIs) for employees and track performance for ongoing improvement through structured performance appraisals and action plans.</li></ul> | <ul><li>Analyse activity-related performance metrics and identify trends, such as average time per case or number of delays, to measure and assess operational performance.</li><li>Assess asset utilisation rates and evaluate revenue per workforce, identifying any inefficiencies or areas of improvement.</li><li>Identify non-performance issues within operations and take corrective actions by reviewing output reports and addressing bottlenecks.</li><li>Design and implement training plans based on identified operational weaknesses and team performance needs.</li><li>Take necessary actions to address underperforming departments or individuals, including driving performance improvement plans (PIPs) and addressing performance issues per organisational policies.</li></ul> |
| **Classroom Aids** ||
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser ||
| **Tools, Equipment and Other Requirements** ||
| WMS (LEARNING VERSION), Computer, Management information system (MIS), Enterprise Resource Planning (ERP), performance review software, budgeting and forecasting software, stationery, worksheets, SOP etc ||

## Module 5: Profit and loss account management and cost accounting
### Mapped to LSC/N9603, V3.0

**Terminal Outcomes:**

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

- Elaborate the importance of accurate allocation of overhead costs to products/services and how to develop competitive pricing strategies for improved profitability.

| Duration: 20:00 | Duration: 35:00 |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| • Describe the process of reviewing and amending department-wise budgets and tracking actual performance against budgeted figures to forecast financial trends.<br>• Explain how to use key financial ratios (gross profit margin, operating margin, etc.) to evaluate and guide decision-making for P&L performance.<br>• Detail how to assess various revenue streams, identify growth opportunities, and explore pricing strategies to improve profitability.<br>• Discuss the strategies to manage expenses, minimise waste, and ensure profitability without impacting product quality or customer satisfaction.<br>• Elaborate the importance of accurate allocation of overhead costs to products/services and how to develop competitive pricing strategies for improved profitability. | • Practice tracking actual performance against budgeted figures, analyse the data and forecast future financial trends for effective decision-making.<br>• Analyse and review unit-wise P&L performance, identify trends, and take corrective actions to optimise the financial performance.<br>• Review direct and indirect costs, identify inefficiencies, and implement corrective actions to minimise unnecessary expenses and improve profitability.<br>• Perform break-even and Cost-Volume-Profit (CVP) analysis to examine the relationships between cost, volume, and profit, helping them understand how changes in sales and costs affect profitability.<br>• Use tools like QuickBooks, Xero, or SAP to automate the generation of P&L accounts and track real-time financial data for improved accuracy and efficiency. |
| **Classroom Aids** | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| **Tools, Equipment and Other Requirements** | |
| WMS (LEARNING VERSION), Computer, Management information system (MIS), Enterprise Resource Planning (ERP), performance review software, budgeting and forecasting software, stationery, worksheets, SOP etc | |

## Module 6: Warehouse Layout Designing
### *Mapped to LSC/N0111, V3.0*

**Terminal Outcomes:**

- Detail the steps to be performed for designing the warehouse

| Duration: *20:00* | Duration: *35:00* |
|---|---|
| **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<br>• Detail prioritisation of goods placement location within a warehouse<br>• Describe the precautions and signages to be used while storing hazardous goods<br>• Explain the design process, equipment and manpower movement flow in the warehouse<br>• Detail the method of analysing the technology feasibility of the proposed designs<br>• Elaborate on sustainability considerations such as energy-efficient lighting, green building design, waste management, etc. | • Classify the warehouse's purpose, such as storage, distribution, order fulfilment, etc.<br>• Create a Floor Plan Design that allows for efficient operations and flow of goods.<br>• Exhibit the precautions and signages to be used while storing hazardous goods<br>• Design aisles and bays that balance space utilisation with efficient movement of goods<br>• Identify the right temperature, humidity and other requirements as per product category<br>• Analyse the technology feasibility of the proposed designs<br>• Support during construction, commissioning and performance reporting of warehouse |

| **Classroom Aids** |
|---|
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser |

| **Tools, Equipment and Other Requirements** |
|---|
| WMS (LEARNING VERSION), Computer, Enterprise Resource Planning (ERP), warehouse design software, inventory models, stationery, SOP etc.. |

# Module 7: Warehouse optimisation and Continuous improvement
*Mapped to LSC/N0139, V1.0*

**Terminal Outcomes:**

- Detail the steps involved in the implementation of health & safety measures

| Duration: 10:00 | Duration: 20:00 |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| • Describe Warehouse optimisation<br>• Detail the steps involved in optimising warehouse operations.<br>• Explain the process of creating and implementing key performance indicators (KPIs) for warehouse operations.<br>• Describe the process of Optimising Warehouse Layout and material flow.<br>• Explain the importance of continuous improvement and how to implement it in the warehouse.<br>• Detail Sustainability and the practices that can be implemented in the warehouse. | • Demonstrate the steps involved in Warehouse optimisation.<br>• Classify products into A, B, and C categories based on their sales volume and store high-demand (A) items near the picking area to reduce picking time.<br>• Illustrate the role of automation in Warehouse optimisation.<br>• Organise products in the warehouse based on demand (ABC analysis), ensuring fast-moving items are easily accessible and slow-moving items are stored further away.<br>• Demonstrate Optimising Warehouse Layout and Material Flow<br>• Ensure continuous improvement efforts remain aligned with changing business needs and warehouse operations.<br>• Illustrate the sustainable practices that can be implemented in a warehouse. |
| **Classroom Aids** | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| **Tools, Equipment and Other Requirements** | |
| Computers with MS Office, PPE, system tools, WMS (LEARNING VERSION) | |

## Module 8: Health, safety, security, integrity and ethics at the workplace.
### *Mapped to LSC/N9911, V1.0*

**Terminal Outcomes:**

- Detail the steps involved in the implementation of health & safety measures
- Follow organisation procedures with respect to documentation.

| Duration: *20:00* | Duration: *40:00* |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| <ul><li>Detail safety procedures for preventing hazards (fire, biohazards) in the workplace.</li><li>Describe hygiene standards, data safety, and the importance of regular health check-ups.</li><li>Explain the emergency protocols like first aid, fire safety, and evacuation procedures.</li><li>Discuss ethical workplace behaviour, safeguarding customer data, and avoiding corruption.</li><li>Describe the inspection procedure to check the safe handling of hazardous goods</li><li>Discuss how to maintain documentation and assist in regulatory inspections.</li><li></li></ul> | <ul><li>Demonstrate safety measures, including wearing protective gear and preventing hazards.</li><li>Keep the workspace organised and follow hygiene protocols.</li><li>Act quickly in emergencies, provide first aid, and follow fire drills.</li><li>Report unethical behaviour and handle ethical dilemmas.</li><li>Maintain accurate documentation and assist with regulatory checks.</li></ul> |
| **Classroom Aids** ||
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser ||
| **Tools, Equipment and Other Requirements** ||
| Computers with MS Office, PPE, system tools, LLMS (Learning Version) ||

## Module 10: Employability Skills
### Mapped to DGT/VSQ/N0103, V1.0

**Terminal Outcomes:**

- Discuss the Employability Skills required for jobs in various industries
- Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen
- Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan

| **Duration**: *30:00* | **Duration**: *60:00* |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| <ul><li>Outline the importance of Employability Skills for the current job market and future of work</li><li>List different learning and employability related GOI and private portals and their usage</li><li>Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen</li><li>Discuss relevant 21st century skills required for employment</li><li>Highlight the importance of practicing 21st century skills like Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life</li><li>Explain the importance of communication etiquette including active listening for effective communication</li><li>Discuss the significance of escalating sexual harassment issues as per POSH act</li><li>Discuss various financial institutions, products, and services</li><li>Explain the common components of salary such as Basic, PF, Allowances (HRA, TA, DA, etc.), tax deductions</li><li>Discuss the legal rights, laws, and aids</li><li>Describe the role of digital technology in day-to-day life and the workplace</li><li>Discuss the significance of displaying responsible online behaviour while using various social media platforms</li><li>Explain the types of entrepreneurship and enterprises</li><li>Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan</li><li>Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement</li><li>Discuss various tools used to collect customer feedback</li><li>Discuss the significance of maintaining hygiene and dressing appropriately</li></ul> | <ul><li>Research and prepare a note on different industries, trends, required skills and the available opportunities</li><li>Demonstrate how to practice different environmentally sustainable practices</li><li>Create a pathway for adopting a continuous learning mindset for personal and professional development</li><li>Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone</li><li>Read and understand text written in basic English</li><li>Write a short note/paragraph / letter/e -mail using correct basic English</li><li>Create a career development plan</li><li>Identify well-defined short- and long-term goals</li><li>Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette</li><li>Write a brief note/paragraph on a familiar topic</li><li>Role play a situation on how to work collaboratively with others in a team</li><li>Demonstrate how to behave, communicate, and conduct appropriately with all genders and PwD</li><li>Demonstrate how to conduct offline and online financial transactions, safely and securely and check passbook/statement</li><li>Calculate income and expenditure for budgeting</li><li>Demonstrate how to operate digital devices and use the associated applications and features, safely and securely</li><li>Demonstrate how to connect devices securely to internet using different means</li><li>Follow the dos and don'ts of cyber security to protect against cyber crimes</li><li>Create an e-mail id and follow e- mail etiquette to exchange e -mails</li><li>Show how to create documents, spreadsheets and presentations using appropriate applications</li><li>Utilize virtual collaboration tools to work effectively</li><li>Create a sample business plan, for the selected business opportunity</li></ul> |

| | |
|---|---|
| • Discuss the significance of maintaining hygiene and dressing appropriately for an interview<br>• List the steps for searching and registering for apprenticeship opportunities | • Classify different types of customers<br>• Demonstrate how to identify customer needs and respond to them in a professional manner<br>• Draft a professional Curriculum Vitae (CV)<br>• Use various offline and online job search sources to find and apply for jobs<br>• Role play a mock interview |

**Classroom Aids**

Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser, UPS, LCD Projector, Computer Tables & chairs

**Tools, Equipment and Other Requirements**

Computer (PC) with latest configurations – and Internet connection with standard operating system and standard word processor and worksheet software (Licensed) (all software should either be latest version or one/two version below), Scanner cum Printer

# Module 11: Automated warehouse management
## Mapped to LSC/N0112, V3.0

**Terminal Outcomes:**

- Elaborate on the process of designing an automated warehouse layout.

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

| Duration: *30:00* | Duration: *30:00* |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| <ul><li>List the parameters to be analysed to design the automated warehouse</li><li>Elaborate on the process of designing an automated warehouse layout.</li><li>Detail the requirements for automated devices like ASRS, AGVs, and other equipment to be used</li><li>Explain the storage racks and pallets selection process</li><li>Explain the standard operating procedures to operate and maintain automated warehouse equipment</li><li>Detail the maintenance requirements of automated warehouse equipment</li><li>Explain the utilisation analysis of automated warehouse assets</li><li>Describe the automated warehouse redesign process to adapt to changing customer needs</li><li>Elaborate the process of managing automated equipment operations</li></ul> | <ul><li>Follow the steps involved in supporting the design of a warehouse layout</li><li>Analyse the types of products being stored, their volume, turn-around time and other business requirements to design the automated warehouse</li><li>Perform the steps for designing an automated warehouse layout.</li><li>Propose conveyor, AGV & MHE movement & merging routes</li><li>Design collision-free routes</li><li>Perform the standard operating procedures to operate and maintain automated warehouse equipment</li><li>Demonstrate the maintenance requirements of automated warehouse equipment</li><li>Perform utilisation analysis of automated warehouse assets</li><li>Demonstrate an automated warehouse redesign process to adapt to changing customer needs</li><li>Review operational parameters, challenges, accidents, system failures, etc., to implement preventive and corrective actions</li><li>Demonstrate the steps involved in managing automated equipment operations</li></ul> |
| **Classroom Aids** ||
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser ||
| **Tools, Equipment and Other Requirements** ||
| WMS (LEARNING VERSION), 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 12: Cold chain warehouse management
### *Mapped to LSC/N0113, V3.0*

**Terminal Outcomes:**

- Demonstrate the steps to be followed for effective cold-chain warehouse management
- Elaborate on the process of designing a cold storage warehouse layout

| Duration: *30:00* | Duration: *30:00* |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| • List the parameters to be analysed to design the cold storage warehouse<br>• Discuss the factors to be considered for designing warehouse layout and storage location<br>• Elaborate on the process of designing a cold storage warehouse layout.<br>• Detail the safe storage standards for refrigerant and gasses (ethylene etc.)<br>• State the temperature, humidity and product handling standards as per SOP<br>• Detail the process of segregation, sorting, grading and ripening operations as per product requirements and SOP<br>• Discuss the HACCP and HAZMAT regulations for different types of goods to provide inputs<br>• Describe the operational fitness requirements of various equipment in the cold chain warehouse<br>• Detail the safety requirements to be followed for various types of products<br>• Detail the compliance requirements of reefer vehicle operations<br>• State the cold chain warehouse operational metrics relating to employee operations, work completion status, temperature maintenance, resource utilisation, downtime, etc.<br>• Elaborate the process of reviewing and managing cold chain operations | • Analyse the types of products being stored, their volume, turn-around time and other business requirements to design the cold chain warehouse<br>• Design warehouse layout and storage location to comply with the various storage and temperature requirements for different products<br>• Assess safe storage of refrigerant and gasses (ethylene etc.)<br>• Plan for evacuation routes, storage racks, pallets, and other equipment in the cold chain warehouse<br>• Monitor compliance to temperature, humidity and product handling as per SOP<br>• Assess compliance with segregation, sorting, grading and ripening operations as per product requirements and SOP<br>• Analyse implementation of HACCP and HAZMAT regulations for different types of goods to provide inputs<br>• Check the operational fitness requirements of various equipment in the cold chain warehouse<br>• Demonstrate the safety requirements to be followed for various types of products<br>• Monitor compliance of reefer vehicle operations to temperature and delivery timelines<br>• Prepare reports on cold chain warehouse operational metrics, such as employee operations, work completion status, temperature maintenance, resource utilisation, and downtime.<br>• Demonstrate the steps involved in reviewing and managing cold chain operations |
| **Classroom Aids** ||
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser ||
| **Tools, Equipment and Other Requirements** ||
| WMS (LEARNING VERSION), ERP, MS Office, cold storage facility, temperature control systems, HACCP and HAZMAT guidelines, stationery, demarcation equipment, SOP, computer, projector, worksheets, etc ||

# Module 13: Dry bulk warehouse management
## Mapped to LSC/N0114, V5.0

**Terminal Outcomes:**

- Demonstrate the steps to be followed for effective management of the dry bulk warehouse
- Elaborate the process of managing Dry bulk warehouse operations

| Duration: *30:00* | Duration: *30:00* |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| <ul><li>List the parameters to be analysed to design the dry bulk warehouse</li><li>Elaborate on the process of designing a Dry bulk warehouse layout.</li><li>Detail the method to plan the right storage method based on temperature, humidity and other conditions required</li><li>State the factors on which the storage site depends</li><li>State the standards for safe handling of MHE equipment</li><li>Detail the handling and storage safety requirements to be followed for various types of products</li><li>Detail the process to reduce product loss by analysing pest/rodent control measures, spillages/breakages and implementing necessary preventive and corrective actions</li><li>Explain the various operational metrics relating to employee operations, work completion status, resources utilised, downtime, spillages, etc.</li><li>Elaborate the process of managing Dry bulk warehouse operations</li></ul> | <ul><li>Analyse product/commodity nature, volume, turn-around time and other business requirements to design the dry bulk warehouse</li><li>Plan the right storage method based on temperature, humidity and other conditions required</li><li>Assess storage site based on<ul><li>ground condition and suitability</li><li>cargo size, weight, height and size of stows/heaps</li><li>electrical installations</li><li>stack integrity and product flow dynamics</li><li>arrangements for both operational and emergency situations, traffic, requirements for permanent or movable bulk walls and maintenance cleaning requirements</li><li>likely vehicle fumes in bulk storage areas</li><li>other operational units in the vicinity</li><li>type of equipment going to be deployed</li></ul></li><li>Propose layout and routes for safe handling of MHE equipment</li><li>Plan systems to continuously monitor cargo volume and warehouse utilisation</li><li>Demonstrate handling and storage safety requirements to be followed for various types of products</li><li>Minimise product loss by analysing pest/rodent control measures, spillages/breakages and implementing necessary preventive and corrective actions</li><li>Prepare reports on dry bulk warehouse operational metrics relating to employee operations, work completion status, resource utilised, downtime, spillages, etc.</li></ul> |

| **Classroom Aids** |
|---|
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser |

| **Tools, Equipment and Other Requirements** |
|---|
| WMS (LEARNING VERSION), ERP, MS Office, stationery, demarcation equipment, MHE and conveyor controls, SOP, computer, projector, worksheets, etc. |

## Module 14: Bonded warehouse management
### Mapped to LSC/N0115, V5.0

**Terminal Outcomes:**

- Demonstrate the steps to be followed for effective bonded warehouse management
- Elaborate on the process of designing a bonded warehouse layout.

| Duration: *30:00* | Duration: *30:00* |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| <ul><li>Explain the importance of assessing site fitness for bonded warehouse</li><li>Detail the bonded warehouse layout regulations</li><li>Elaborate on the process of designing a bonded warehouse layout.</li><li>Detail the standards for safe handling of MHE equipment</li><li>Explain the documentation to be maintained in a bonded warehouse</li><li>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</li><li>Explain dispute resolution and grievance redressal process in case of any discrepancies in export/import documentation</li><li>State the legal regulations governing bonded warehouses</li><li>Elaborate the process of managing bonded warehouse operations</li></ul> | <ul><li>Assess site fitness for the bonded warehouse in terms of industrial development, licenses, products handled, turnaround time, etc.</li><li>Inspect compliance of design to regulations</li><li>Propose layout and routes for safe handling of MHE equipment</li><li>Plan systems to continuously monitor cargo flow and warehouse utilisation</li><li>Prepare documentation to be maintained in bonded warehouse</li><li>Prepare bonds for goods stored in a warehouse</li><li>Establish good relationships with customs, brokers, transporters, clients, IATA agents, insurance agents, etc for timely inspection, customs clearance and delivery of goods</li><li>Demonstrate dispute resolution and grievance redressal process in case of any discrepancies in export/import documentation</li><li>Review operational parameters, challenges, equipment maintenance, asset utilisation, accidents, etc, to implement preventive and corrective actions</li><li>Apply opportune changes or updates in accordance with the legal regulations governing bonded warehouse</li><li>Perform effective coordination with clients, customs officials, custom brokers, transport brokers, International Air Transport Association (IATA) agents, etc., for customs clearance requirements</li></ul> |
| **Classroom Aids** ||
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser ||
| **Tools, Equipment and Other Requirements** ||
| WMS (LEARNING VERSION), ERP, MS Office, stationery, demarcation equipment, SOP, computer, projector, customs documentation, worksheets, etc. ||

# Trainer Requirements

| Trainer Prerequisites | | | | | |
|---|---|---|---|---|---|
| **Minimum Educational Qualification** | **Specialization** | **Relevant Industry Experience** | | **Training Experience** | | **Remarks** |
| | | *Years* | *Specialization* | *Years* | *Specialization* | |
| Any degree | | 2 | Warehousing | | | |

| Trainer Certification | |
|---|---|
| **Domain Certification** | **Platform Certification** |
| Certified for Job Role: "Warehouse Manager" mapped to QP: "LSC/Q0103, V3.0". Minimum accepted score is 80% | Recommended that the Trainer is certified for the Job Role: "Trainer (VET and Skills)", mapped to the Qualification Pack: "MEP/Q2601, V2.0" with minimum score of 80% |

## Assessor Requirements

| Assessor Prerequisites | | | | | |
|---|---|---|---|---|---|
| Minimum Educational Qualification | Specialization | Relevant Industry Experience | | Training/Assessment Experience | | Remarks |
| | | *Years* | *Specialization* | *Years* | *Specialization* | |
| Any degree | | 2 | Warehousing | | | |

| Assessor Certification | |
|---|---|
| **Domain Certification** | **Platform Certification** |
| Certified for Job Role: "Warehouse Manager" mapped to QP: "LSC/Q0103, V3.0". Minimum accepted score is 80% | Recommended that the Assessor is certified for the Job Role: "Assessor (VET and Skills)", mapped to the Qualification Pack: "MEP/Q2701, V2.0" with minimum score of 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.

2. **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.

3. **On-Job Training:** OJT would be evaluated based on standard logbook capturing departments worked on, key observations of learner, feedback and remarks of supervisor or mentor.

4. **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:

   a. True / False Statements
   b. Multiple Choice Questions
   c. Matching Type Questions
   d. Fill in the blanks
   e. Scenario based Questions
   f. 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:

   i. Guidance regarding NSQF
   ii. Qualification Pack Structure
   iii. Guidance for the assessor to conduct theory, practical and viva assessments
   iv. Guidance for trainees to be given by assessor before the start of the

assessments.

- v. Guidance on assessments process, practical brief with steps of operations practical observation checklist and mark sheet
- vi. Viva guidance for uniformity and consistency across the batch.
- vii. Mock assessments
- viii. Sample question paper and practical demonstration

**5.**

# 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 |