



Model Curriculum

QP Name: Functional Analyst - WMS

QP Code: LSC/Q0501

QP Version: 1.0

NSQF Level: 6

Model Curriculum Version: 1.0

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Training Parameters

Sector	Logistics
Sub-Sector	Warehousing (Storage & Packaging)
Occupation	Technology, Warehousing Operations
Country	India
NSQF Level	6
Aligned to NCO/ISCO/ISIC Code	NC0-2015/2511 & ISCO-08/2511
Minimum Educational Qualification and Experience	<p>MBA (Operations Management) + 1 Year of experience in warehouse operations</p> <p>OR</p> <p>B.Tech + 3 Years of experience in warehouse operations</p> <p>OR</p> <p>Pursuing PG diploma in Logistics after 3 year UG degree</p> <p>OR</p> <p>Completed 4 year UG Program (in any discipline) with 2 Years of experience in warehouse operations</p> <p>OR</p> <p>Previous relevant Qualification of NSQF Level (Graduate with Previous relevant Qualification of NSQF Level 5 (In Warehousing) with 3 Years of experience warehouse operations</p>
Pre-Requisite License or Training	NA
Minimum Job Entry Age	23
Last Reviewed On	03/05/2023
Next Review Date	03/05/2026
NSQC Approval Date	03/05/2023
QP Version	1.0
Model Curriculum Creation Date	03/01/2023
Model Curriculum Valid Up to Date	03/05/2026
Model Curriculum Version	1.0
Minimum Duration of the Course	660
Maximum Duration of the Course	660

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:

- Perform Warehouse Operations with help of RDT and WMS screens.
- Analyse operations for Brownfield Warehouse
- Perform the Process improvements and document the improvements of Warehouses
- Manage the design sessions of Greenfield warehouses from Functional and Technical aspect.
- Prepare the final functional design document, technical design document, process document and user guides for warehouses.
- Supervise and provide certification on various type of good handlings through safe warehouse processes

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 Functional Analyst - WMS	20	10			30
LSC/N0501 - Operational Direction and Enablement of Strategic Vision V1.0 NSQF Level 6	20	60	10		90
Module 2: Operational Direction and Strategic Vision	20	60	10		90
LSC/N0502 - Identify optimization opportunities for industry/domain V1.0 NSQF Level 6	20	60	10		90
Module 3: Optimization opportunities for industry/domain	20	60	10		90

LSC/N0503 - Lead the design and implementation of WMS in existing and new warehouses. V1.0 NSQF Level 6	20	60	10		90
Module 4: Design and implementation of WMS in existing and new warehouses	20	60	10		90
LSC/N0504 - Prepare Documentations of various Business Processes V1.0 NSQF Level 6	20	70			90
Module 5: Documentations of various Business Processes	20	70			90
LSC/N9902: Communicate effectively with colleagues and clients V1.0 NSQF Level 6	20	40			60
Module 6: Work effectively with colleagues	20	40			60
LSC/N9908 – Maintain and monitor integrity and ethics in operations V1.0 NSQF Level 6	20	40			60
Module 7: Maintain and monitor integrity and ethics in operations	20	40			60
LSC/N9910: Follow health, safety and security procedures at workplace. V1.0 NSQF Level 6	20	40			60
Module 8: Compliance to health, safety and security norms	20	40			60
Employability Skills DGT/VSQ/N0103	30	60			90
Total Duration	190	440	30		660

Module Details

Module 1: Introduction to Functional Analyst - WMS

Mapped to Bridge Module

Terminal Outcomes:

- Describe the basic function of Warehouse Management
- Detail the various processes involved in Warehouse

Duration: 20:00	Duration: 10:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Classify the components of supply chain Execution • Detail activities of Warehouse • Explain job roles in Warehouse • Detail your job role as Warehouse Functional Analyst and its interface with other job roles 	<ul style="list-style-type: none"> • Identify various activities in Warehouse • Identify various job roles in Warehouse • Identify and understand the operations of various types of Locations in the Warehouse (ex: Rack, Shelf, etc..)
Classroom Aids	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
Tools, Equipment and Other Requirements	
WMS (learning version).	

Module 2: Operational Direction and Enablement of Strategic Vision

Mapped to LSC/N0501 , v1.0

Terminal Outcomes:

- Detail the steps involved in the implementation of warehouse systems in Greenfield and Brownfield Warehouse.

Duration: 20:00	Duration: 60:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss difference between Greenfield and Brownfield Warehouse. • Discuss different layouts of warehouses including multi floor level warehouse • Detail impact analysis of Software implementation in Warehouse Operations. • Explain the usage of different market leader WMS software 	<ul style="list-style-type: none"> • Examine difference in operations at Ground floor and Mezzanine floor. • Analyse different Warehouse operations in several kinds of locations. • Demonstrate WMS system usage on GUI • Demonstrate WMS system usage on RDT • Check User guides of WMS System
Classroom Aids	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
Tools, Equipment and Other Requirements	
Computers, RDT, Reach Truck, WMS User guides, WMS (learning version)	

Module 3: Identify Optimization opportunities for Industry/Domain

Mapped to LSC/N0502, V1.0

Terminal Outcomes:

- Provide the business impact and potential improvement post implementation of WMS Software

Duration: 20:00	Duration: 60:00
<p>Theory – Key Learning Outcomes</p> <ul style="list-style-type: none"> • Explain the preparation of process flow chart, process flow document for warehouse operations • Detail the different receiving methodologies <ul style="list-style-type: none"> ○ Master Receipt Receiving ○ Invoice Receiving ○ Blind Receiving • Detail the different Putaway Algorithms <ul style="list-style-type: none"> ○ First in First Out Putaway ○ Bulk Putaway ○ Case Putaway • Detail the different Pick Methodology <ul style="list-style-type: none"> ○ Each Picking ○ Case Picking ○ Pallet Picking ○ Bulk Picking • Describe the different Packing Methodology • Discuss the different Loading methodology 	<p>Practical – Key Learning Outcomes</p> <ul style="list-style-type: none"> • Evaluate the receiving methodologies and provide process improvement • Evaluate the pick methodologies and provide process improvements • Assess the packing methodology and provide process improvement • Assess the flowchart preparation for different processes. • Assess the carbon emission for different processes • Provide process improvement for various warehouse operations such as inventory management, quality process, return process.
<p>Classroom Aids</p> <p>Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser</p>	
<p>Tools, Equipment and Other Requirements</p> <p>Computers, WMS (learning version), Receiving/Picking/Packing/Loading Equipment, MS Visio</p>	

Module 4: Lead the design and implementation of WMS in existing and new warehouses

Mapped to LSC/N0503, v1.0

Terminal Outcomes:

- Explain the concept of Warehouse Designs
- Detail the various implementation methodology of WMS

Duration: 20:00	Duration: 60:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Detail the steps in designing WMS process in implementation cycle • Evaluate Business requirement Document and its significance • Describe the concepts of Warehouse Design • Explain the various possible integration touch points. • Explain data and information security practices • Describe on Gap Analysis document • Explain data touch points and its impact on the design • Discuss data security practices • Detail the steps involved in designing integration touch points with upstream and downstream systems 	<ul style="list-style-type: none"> • Demonstrate the process of designing WMS process in implementation cycle • Demonstrate the process of designing integration touch points with upstream and downstream systems
Classroom Aids	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
Tools, Equipment and Other Requirements	
WMS (learning version).	

Module 5: Prepare Documentations of various Business Processes

Mapped to LSC/N0504, v1.0

Terminal Outcomes:

- Detail the process of documentation for various processes

Duration: 20:00	Duration: 70:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the process of assessing different processes • Discuss the processes and details needed to document. • Detail the entire document editing after feedback process 	<ul style="list-style-type: none"> • Assess different processes • Prepare documentation for different processes as per SOP • Perform document editing after the feedback process
Classroom Aids	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
Tools, Equipment and Other Requirements	
WMS (learning version).	

Module 6: Work effectively with colleagues

Mapped to LSC/N9902, v1.0

Terminal Outcomes:

Apply different approaches to build and maintain relationships with colleagues

Duration: 20:00	Duration: 40:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Detail the various factors to be aware of while interacting with seniors • Describe ways to build new professional relationships with colleagues/clients • Explain the importance of following workplace ethics to create a healthy working environment. • Discuss the qualities of a supportive team player • Discuss the ways to maintain relationships with a diverse range of colleagues/clients 	<ul style="list-style-type: none"> • Apply different approaches for conflict management and resolution • Demonstrate methods to build healthy relations across business units • Identify strategies to build rapport such as remembering names, being empathetic, mirroring, etc.
Classroom Aids	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
Tools, Equipment and Other Requirements	
WMS (learning version).	

Module 7: Maintain and monitor integrity and ethics in operations

Mapped to LSC/N9908, v1.0

Terminal Outcomes:

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

Duration: 20:00	Duration: 40:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Describe the concepts of integrity, ethics • Detail the various regulatory requirements related to logistics industry • Explain data and information security practices • Discuss the various 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 	<ul style="list-style-type: none"> • Illustrate the importance of integrity and how ethics needs to be followed. • 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 • Demonstrate what are the integrity and ethic violations. • 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	
WMS (learning version), LLMS (learning version).	

Module 8: Compliance to health, safety and security norms

Mapped to LSC/N9910, v1.0

Terminal Outcomes:

- Describe the application of health and safety practices at the workplace.

Duration: 20:00	Duration: 40:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Describe personal hygiene practices. • List first aid box items and their use • List the situation that may lead to accidents at the workplace and ways to prevent them. • Discuss data safety process and procedures to be followed at workplace. • Describe the steps of emergency procedures during accidents/fire or other hazards situations. • Identify safety signs. • Classify the various fire extinguishers for different types of fires 	<ul style="list-style-type: none"> • Demonstrate personal hygiene practices to be followed at workplace. • Demonstrate appropriate first aid in different situations. • Practice emergency evacuation drills. • Demonstrate the use of fire extinguishers. • Illustrate how to maintain a clean workstation.
Classroom Aids	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
Tools, Equipment and Other Requirements	
Personal Protective Equipment (PPEs), WMS (learning version), LLMS (learning version).	

Module 9: 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 style="list-style-type: none"> • Outline the importance of Employability Skills for the current job market and future of work • List different learning and employability related GOI and private portals and their usage • 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 relevant 21st century skills required for employment • 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 • Explain the importance of communication etiquette including active listening for effective communication • Discuss the significance of escalating sexual harassment issues as per POSH act • Discuss various financial institutions, products, and services 	<ul style="list-style-type: none"> • Research and prepare a note on different industries, trends, required skills and the available opportunities • Demonstrate how to practice different environmentally sustainable practices • Create a pathway for adopting a continuous learning mindset for personal and professional development • Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone • Read and understand text written in basic English • Write a short note/paragraph / letter/e-mail using correct basic English • Create a career development plan • Identify well-defined short- and long-term goals • Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette • Write a brief note/paragraph on a familiar topic • Role play a situation on how to work collaboratively with others in a team • Demonstrate how to behave, communicate, and conduct appropriately with all genders and PwD • Demonstrate how to conduct offline and online financial transactions, safely and securely and check passbook/statement

<ul style="list-style-type: none"> • Explain the common components of salary such as Basic, PF, Allowances (HRA, TA, DA, etc.), tax deductions • Discuss the legal rights, laws, and aids • Describe the role of digital technology in day-to-day life and the workplace • Discuss the significance of displaying responsible online behaviour while using various social media platforms • Explain the types of entrepreneurship and enterprises • Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan • Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement • Discuss various tools used to collect customer feedback • Discuss the significance of maintaining hygiene and dressing appropriately • Discuss the significance of maintaining hygiene and dressing appropriately for an interview • List the steps for searching and registering for apprenticeship opportunities 	<ul style="list-style-type: none"> • Calculate income and expenditure for budgeting • Demonstrate how to operate digital devices and use the associated applications and features, safely and securely • Demonstrate how to connect devices securely to internet using different means • Follow the dos and don'ts of cyber security to protect against cyber crimes • Create an e-mail id and follow e-mail etiquette to exchange e-mails • Show how to create documents, spreadsheets and presentations using appropriate applications • Utilize virtual collaboration tools to work effectively • Create a sample business plan, for the selected business opportunity • Classify different types of customers • Demonstrate how to identify customer needs and respond to them in a professional manner • Draft a professional Curriculum Vitae (CV) • Use various offline and online job search sources to find and apply for jobs • Role play a mock interview
<p>Classroom Aids</p>	
<p>Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser, UPS, LCD Projector, Computer Tables & chairs</p>	
<p>Tools, Equipment and Other Requirements</p>	
<p>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, WMS (learning version), LLMS (learning version).</p>	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
MBA/ B Tech	Warehouse operations	2	Warehouse operations	2	Warehouse operations	

Trainer Certification	
Domain Certification	Platform Certification
Certified for Job Role: “Functional Analyst – WMS” mapped to QP: “LSC/Q0501, v1.0”. 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”. Minimum accepted score is 80%

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
MBA/B Tech	Warehouse operations	1	Warehouse operations	1	Warehouse operations	

Assessor Certification	
Domain Certification	Platform Certification
Certified for Job Role: “Functional Analyst – WMS” mapped to QP: “LSC/Q0501, v1.0”. 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 log book 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:
 - i. True / False Statements
 - ii. Multiple Choice Questions
 - iii. Matching Type Questions
 - iv. Fill in the blanks
 - v. Scenario based Questions
 - vi. 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).
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