



Model Curriculum

QP Name: Multimodal Transport Planner

QP Code: LSC/Q6501

QP Version: 1.0

NSQF Level: 5.5

Model Curriculum Version: 1.0

Table of Contents

Training Parameters	2
Program Overview.....	3
Training Outcomes.....	3
Compulsory Modules.....	3
Module 1: Introduction to Multimodal Transport Planner	5
Module 2: Freight Analysis	6
Module 3: Building Multimodal Network.....	7
Module 4: Routing	8
Module 5: Tracking and Tracing	9
Module 6: Managing contingencies.....	10
Module 7: Freight Risk Analysis and Management	11
Module 8: Follow health, safety, security procedures and maintain integrity, ethics at workplace.	12
Module 9: Employability Skills	13
Annexure	15
Trainer Requirements	15
Assessor Requirements.....	16
Assessment Strategy	17
References.....	19
Glossary.....	19
Acronyms and Abbreviations	20

Training Parameters

Sector	Logistics
Sub-Sector	Supply Chain
Occupation	Transport Management
Country	India
NSQF Level	5.5
Aligned to NCO/ISCO/ISIC Code	NCO-2015/1324
Minimum Educational Qualification and Experience	Completed UG Degree + 3 years relevant experience OR Completed 2-year diploma after 12th + 4.5 years relevant experience OR Completed 3-year diploma (after 10th) + 6 years relevant experience OR 12th Grade pass + 7.5 years relevant experience OR Previous relevant Qualification of NSQF Level 5 + 3 years relevant experience
Pre-Requisite License or Training	NA
Minimum Job Entry Age	23 Years
Last Reviewed On	31/01/2024
Next Review Date	31/01/2027
NSQC Approval Date	31/01/2024
QP Version	1.0
Model Curriculum Creation Date	13/12/2023
Model Curriculum Valid Up to Date	31/01/2027
Model Curriculum Version	1.0
Minimum Duration of the Course	630
Maximum Duration of the Course	630

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:

- Describe the basic functions of Multimodal Transport Planner.
- Detail the various processes involved in Multimodal Transportation.
- List the steps in data collection for freight analysis.
- Detail the process of evaluating & analysing data.
- Perform the steps involved for creating Multimodal Network.
- Describe the process of routing a shipment through Multimodal transportation.
- Detail the steps involved in tracking and tracing shipments.
- Detail the process of managing contingencies that arise while sending shipments through Multimodal transportation.
- Follow the steps involved in risk management in transportation.
- Explain how to perform freight spend & risk analysis and risk management.
- Detail the steps involved in the implementation of health & safety measures.

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 Multimodal Transport Planner	20	10			30
LSC/N6501 - Perform Freight Analysis V1.0 NSQF Level 5.5	20	60	10		90
Module 2: Freight Analysis	20	60	10		90
LSC/N6502 - Building Multimodal Network V1.0 NSQF Level 5.5	20	60	10		90
Module 3: Building Multimodal Network	20	60	10		90
LSC/N6503 - Transportation and Route Optimization through Multimodal Network V1.0 NSQF Level 5.5	15	35	10		60
Module 4: Routing	15	35	10		60
LSC/N6504 – Tracking and tracing V1.0 NSQF Level 5.5	30	60			90

Module 5: Tracking and tracing	30	60		90
LSC/N6505 - Manage contingencies in transport V1.0	30	60		90
NSQF Level 5.5				
Module 6: Managing contingencies	30	60		90
LSC/N6506 - Risk Management in transportation V1.0	20	40		60
NSQF Level 5.5				
Module 7: Freight Risk Analysis and Management	20	40		60
LSC/N9911 - Follow health, safety, security procedures and maintain integrity, ethics at workplace V1.0	10	20		30
NSQF Level 5.5				
Module 8: Follow health, safety, security procedures and maintain integrity, ethics at workplace	10	20		30
Employability Skills DGT/VSQ/N0103	30	60		90
Total Duration	195	405	30	630

Module Details

Module 1: Introduction to Multimodal Transport Planner

Mapped to Bridge Module

Terminal Outcomes:

- Describe the basic functions of Multimodal Transport Planner
- Detail the various processes involved in Multimodal Transportation

Duration: 20:00	Duration: 10:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Brief the sub sectors of logistics and their basic functions. • Detail the activities that take place in transportation. • Detail the various job roles in multimodal transportation. • Explain your job role as Multimodal Transport Planner and its interface with other job roles. 	<ul style="list-style-type: none"> • Analyse the various activities that take place in multimodal transportation. • Illustrate the functions of other job roles in transportation. • Identify the operations of multimodal transportation.
Classroom Aids	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
Tools, Equipment and Other Requirements	
Computers with web camera, MS office, TMS (learning version).	

Module 2: Freight Analysis

Mapped to LSC/N6501, v1.0

Terminal Outcomes:

- List the steps in data collection for freight analysis.
- Detail the process of evaluating & analysing data.

Duration: 20:00	Duration: 60:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Detail the process of data collection for freight analysis. • Detail the data to be collected about the shipment to be transported. • Explain the documentation requirements and the preparation time. • Describe the (RFID)-based tracking methods and Internet of Things (IoT) telematics device-based tracking methods. • Differentiate between multimodal and intermodal transport with cost & the pros and cons of it. 	<ul style="list-style-type: none"> • Prepare a checklist of the various data that needs to be collected for analysis and their sources. • Collect data as per the checklist and Perform Freight analysis. • Analyze the BDP (Best demonstrated practices) of leading market players. • Calculate and check pre- and post- haul cost. • Demonstrate using the FOIS portal and other direct carrier portals. • Coordinate with docking/transshipment terminals for details on space bookings, demurrage, facilities offered like forklift, crane etc. rental charges and restrictions if any.
Classroom Aids	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
Tools, Equipment and Other Requirements	
Computers with web camera, scanners, system tools, TMS (learning version).	

Module 3: Building Multimodal Network

Mapped to LSC/N6502, v1.0

Terminal Outcomes:

- Perform the steps involved for creating Multimodal Network

Duration: 20:00	Duration: 60:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Detail the concept of Travel Demand Management (TDM). • Detail pre- and post-haulage processes. • Describe how to use cost effective transport for various modes of transportation. • List the various factors and key aspects to be considered while choosing vendors & carriers. • Explain the process of setting up end to end process for the routes designed. • Explain how to create route plans based on hub and spoke methods. 	<ul style="list-style-type: none"> • Perform the steps involved for creating a Multimodal network. • Devise KPIs for vendors and SOPs for processes. • Prepare multiple route plans for LTC, pre-haul, long haul and end haul transportation considering the aspects like location, network design etc. • Demonstrate how to prepare & implement combined transport document across networks. • Analyse the Tactical/strategic problems that may arise before finalizing. • Design multiple routes for multimodal transportation with different parameters. • Perform trial runs on each network designed and analyze efficiency based on parameters. • Create route plans for reverse logistics.
Classroom Aids	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
Tools, Equipment and Other Requirements	
Computers with web camera, Transportation applications, TMS (learning version).	

Module 4: Routing

Mapped to LSC/N6503, v1.0

Terminal Outcomes:

- Describe the process of routing a shipment through Multimodal transportation

Duration: 15:00	Duration: 35:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> List down the details to be collected for shipment transportation. Detail the various contingencies or hurdles that might occur and affect transit. Describe the usage of tracking devices. Explain the rules and regulations of transshipment. List the various transit documents for each mode of transport. Discuss how to select agents in the planned Corridors. 	<ul style="list-style-type: none"> Perform the steps in booking and transportation of shipment through Multimodal transportation. Analyse the cost for different modes of transport and check space availability. Demonstrate space booking for each mode of transport, using the concerned transport provider’s software. Prepare transport documents according to the different carriers. Comply with the rules and regulations of transshipment while transporting and handling the cargo. Demonstrate the planning of Alternative and additional Transport Corridors according to Customer Needs. Evaluate the various risks associated with the handling of cargo. Verify if the goods are handled according to customs process and they are packed as per transit requirements.
Classroom Aids	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
Tools, Equipment and Other Requirements	
Computers with web camera, Transportation applications, TMS (learning version).	

Module 5: Tracking and Tracing

Mapped to LSC/N6504, v1.0

Terminal Outcomes:

- Detail the steps involved in tracking and tracing shipments

Duration: 30:00	Duration: 60:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Detail the process of tracking and tracing and its significance in transportation. • Describe unaccompanied combined transport (UCT) • List the shipment data that needs to be consolidated. • Describe the various types of tracking identifiers and how to use them online. • Detail the steps to be followed if the status if the shipment is not updated in the tracking system. 	<ul style="list-style-type: none"> • Perform tracking of the consignments using online tracking tools • Check the various parameters in case of a consignment is delayed and document the same. • Match the current status of the shipment obtained from concerned hubs with online tracking. • Inform the stakeholders about the status of shipments. • Demonstrate how to monitor the shipment on both master level and unit level.
Classroom Aids	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
Tools, Equipment and Other Requirements	
Computers with web camera, Transportation applications, TMS (learning version).	

Module 6: Managing contingencies

Mapped to LSC/N6505, v1.0

Terminal Outcomes:

- Detail the process of managing contingencies that arise while sending shipments through Multimodal transportation.

Duration: 30:00	Duration: 60:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Detail the contingencies that may arise while sending shipments. • Explain the process for handling damaged shipment. • Describe the lost shipment process. • Define root cause analysis, its significance and how to perform the same. • Discuss the various reasons for transit delays and the methods to handle them. • Explain what manual searching is and the processes. • Detail the procedure for identifying and claiming for insurance. 	<ul style="list-style-type: none"> • Perform the steps to handle damaged shipments according to the extent of damage. • Apply for insurance or claim according to the SOP signed with the carrier. • Demonstrate the steps to be followed for the lost shipment. • Follow the steps for handling transit delays due to various reasons. • Devise alternative plans for delayed shipments. • Report deviations as per the escalation matrix.
Classroom Aids	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
Tools, Equipment and Other Requirements	
Computers with web camera, samples of forecasting and demand patterns, system tools, TMS (learning version).	

Module 7: Freight Risk Analysis and Management

Mapped to LSC/N6506, v1.0

Terminal Outcomes:

- Follow the steps involved in risk management in transportation
- Explain how to perform freight spend & risk analysis and risk management

Duration: 20:00	Duration: 40:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain freight spend analysis and its importance. • List the different software systems from which data can be populated for analysis. • Detail the technologies that can be integrated into existing transportation planning solution. • Discuss the importance of risk management. 	<ul style="list-style-type: none"> • Perform freight spending analysis with all forward and reverse costs considered. • Collect data and perform risk analysis. • Prepare a Scorecard and use the same for easy comparison of carrier performances based on different factors. • Follow the steps involved in Risk Management. • Use optimization solutions for transport, load planning and route optimization. • Identify the cost optimization techniques. • Select vendors with APIs (Application Programming Interface), better vehicle maintenance and safety records.
Classroom Aids	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
Tools, Equipment and Other Requirements	
Computers with web camera, system tools, TMS (learning version).	

Module 8: Follow health, safety, security procedures and maintain integrity, ethics at workplace.

Mapped to LSC/N9911, 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
<ul style="list-style-type: none"> • Detail the safety regulations and procedures w.r.t fire hazards, biohazards, etc. • Explain various PPE utilized in logistics and their uses. • Describe data safety regulations and clear worktable policy. • Explain the importance of taking care of personal health and hygiene. • Detail the standard procedures to be followed during emergency situations. • Explain 5s at workplace and code of ethics. 	<ul style="list-style-type: none"> • Follow health, safety and security measures during all activities. • Wear all safety equipment including protective gear, helmets etc., in relevant bay areas. • Recognize unsafe conditions and safety practices at the workplace and report it to concerned authorities. • Comply with data safety regulations of the organization and follow clear worktable policy. • Maintain personal health and hygiene. • Practise basic first aid methods. • Follow procedures to handle emergency situations. • Protect data and information related to business or commercial decisions. Prevent company and customer information leakage. • Refrain from indulging in corrupt practices and consult senior management when in an ethical dilemma. • Follow organization procedures with respect to documentation.
Classroom Aids	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
Tools, Equipment and Other Requirements	
Computers with web camera, PPE, system tools, 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. • Explain the common components of salary such as Basic, PF, Allowances (HRA, TA, DA, etc.), tax deductions. 	<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. • 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. • Calculate income and expenditure for budgeting. • Demonstrate how to operate digital devices and use the associated

<ul style="list-style-type: none"> • 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 	<p>applications and features, safely and securely.</p> <ul style="list-style-type: none"> • Demonstrate how to connect devices securely to internet using different means. • Follow the dos and don'ts of cyber security to protect against cybercrimes. • 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</p>	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Any Degree	Transportation	2	Transportation			

Trainer Certification	
Domain Certification	Platform Certification
Certified for Job Role: “Multimodal Transport Planner” mapped to QP: “LSC/Q6501, 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	
Any Degree	Transportation	2	Transportation			

Assessor Certification	
Domain Certification	Platform Certification
Certified for Job Role: “Multimodal Transport Planner” mapped to QP: “LSC/Q6501, 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”. 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.

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:

- 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
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
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.
Procedural Knowledge	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work, or produce a tangible work output by applying cognitive, affective or psychomotor skills.
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