



Model Curriculum

QP Name: Functional Analyst - TMS

QP Code: LSC/Q0502

QP Version: 1.0

NSQF Level: 6

Model Curriculum Version: 1.0

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Training Parameters

| | |
|---|---|
| Sector | Logistics |
| Sub-Sector | Land Transportation |
| Occupation | Technology, Transport 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 transport operations</p> <p>OR</p> <p>B.Tech + 3 Years of experience in transport 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 transport operations</p> <p>OR</p> <p>Previous relevant Qualification of NSQF Level (Graduate with Previous relevant Qualification of NSQF Level 5 (In Transportation)) with 3 Years of experience transport 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 Transportation Operations with help of TMS screens.
- Analyse operations as Planners for Transportation Application
- Manage the design sessions of Transportation System from Functional and Technical aspect.
- Prepare the final functional design document, technical design document, process document and user guides for Logistics process.
- Supervise and provide certification on various type of good handlings through safe transportation 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 - TMS | 20 | 10 | | | 30 |
| LSC/N0505 - 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/N0506 - 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/N0507 - Lead the design and implementation of TMS in existing and new transportation network V1.0 NSQF Level 6 | 20 | 60 | 10 | | 90 |
| Module 4: Design and implementation of TMS in existing and new transportation network | 20 | 60 | 10 | | 90 |
| LSC/N0508 - Prepare Documentations of various Transportation Business Processes V1.0 NSQF Level 6 | 20 | 70 | | | 90 |
| Module 5: Documentations of various Transportation 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 Transportation Management

Mapped to Bridge Module

Terminal Outcomes:

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

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

Module 2: Operational Direction and Enablement of Strategic Vision

Mapped to LSC/N0505, v1.0

Terminal Outcomes:

- Detail the steps involved in implementation of System based Transportation Management System

| Duration: 20:00 | Duration: 60:00 |
|---|--|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Discuss the difference between Paper Based Transportation process and System Based Transportation process • Detail different Master Data required and its significance in the Transportation process • Detail impact analysis of software implementation in Transportation Operations. • Explain the usage of different market leader TMS software | <ul style="list-style-type: none"> • Examine difference in operations at Ground floor and Mezzanine floor. • Perform analysis of Transportation Routes and impact on the overall cost. • Provide future transportation routes • Demonstrate TMS system usage on GUI • Check User guides of TMS System |
| Classroom Aids | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| Tools, Equipment and Other Requirements | |
| TMS (learning version), Computers, RDT, Reach Truck, TMS User guides | |

Module 3: Optimization opportunities for Industry/Domain - TMS

Mapped to LSC/N0506, v1.0

Terminal Outcomes:

- Provide the Business Impact and Potential Improvement post implementation of TMS Software

| Duration: 20:00 | Duration: 60:00 |
|--|---|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Explain the preparation of process flow chart, process flow document for transport operations • Detail learning of Transportation operations • Detail the process of order planning and processing <ul style="list-style-type: none"> ○ Shipment Creation ○ Shipment Processing ○ Shipment Validation • Detail the process of Load Execution and Tendering process <ul style="list-style-type: none"> ○ Combining different Shipments into Load ○ Load Confirmation with help of Route Optimization ○ Load Tendering to different carriers based on Cost analysis • Detail the process of Carrier Sequential Tendering and dock scheduling • Detail learning of Dock Scheduling • Detail the different Tariff modelling and Fuel Surcharge | <ul style="list-style-type: none"> • Prepare the process flow chart, process flow document and user guides for transport operations • Assess order planning and processing and provide process improvement • Design the various steps under load execution for shipments • Demonstrate the steps to be performed under carrier sequential tendering and dock scheduling • Provide process improvement for various transport operations such as tariff modelling process, load optimization process etc. • . |
| Classroom Aids | |
| Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | |
| Tools, Equipment and Other Requirements | |
| TMS (learning version), Computers, Receiving/Picking/Packing/Loading Equipment, MS Visio | |

Module 4: Lead the design and implementation of TMS in existing and new transportation network.

Mapped to LSC/N0507, v1.0

Terminal Outcomes:

- Explain the concepts of Transportation Designs
- Detail the various implementation methodology of TMS

| 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 TMS process in implementation cycle • Assess Business requirement Document and its significance • Describe the concepts of Transportation Design • Explain the various possible integration touch points. • Explain data and information security practices • Explain As-IS analysis • 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 TMS process in implementation cycle • Perform As-is analysis • 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 | |
| TMS (learning version). | |

Module 5: Documentations of various Transportation Business Processes

Mapped to LSC/N0508, 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 | |
| TMS (learning version). | |

Module 6: Communicate effectively with colleagues and clients

Mapped to LSC/N9902, v.1,0

Terminal Outcomes:

Apply different approaches to build and maintain relationships with colleagues

| Duration: 20:00 | Duration:40:00 |
|---|--|
| <p>Theory – Key Learning Outcomes</p> <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 | <p>Practical – Key Learning Outcomes</p> <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. |
| <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>TMS (learning version).</p> | |

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 | |
| LLMS (learning version), TMS (learning version). | |

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

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), LLMS (learning version), TMS (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 |

| | |
|--|--|
| <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 | <p>and securely and check passbook/statement</p> <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, LLMS (learning version), TMS (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 | Transport operations | 2 | Transport operations | 2 | Transport operations | |

| Trainer Certification | |
|---|--|
| Domain Certification | Platform Certification |
| Certified for Job Role: “Functional Analyst – TMS” mapped to QP: “LSC/Q0502, 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 | Transport operations | 1 | Transport operations | 1 | Transport operations | |

| Assessor Certification | |
|---|---|
| Domain Certification | Platform Certification |
| Certified for Job Role: “Functional Analyst – TMS” mapped to QP: “LSC/Q0502, 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 |