







Model Curriculum

QP Name: Cluster Manager

QP Code: TEL/Q4102

QP Version: 3.0

NSQF Level: 6

Model Curriculum Version: 1.0

Telecom Sector Skill Council Estel House, 3rd Floor, Plot No:- 126, Sector 44 Gurugram, Haryana 122003







Table of Contents

Training Parameters	3
Program Overview	4
Training Outcomes	4
Compulsory Modules	4
Module Details	6
Module 1: Introduction to the Role of Telecom Cluster Manager	6
Module 2: Repair and Maintenance of Worksite	7
Module 3: Maintain Compliances and Quality at the Worksite	9
Module 4: Communication and Interpersonal Skills	10
Module 5: Manage Work, Resources and Safety at Workplace	12
Module 6: On-the-job Training	14
Module 7: DGT/VSQ/N0102 Employability Skills (90 hours)	15
Annexure	17
Trainer Requirements	17
Assessor Requirements	18
Assessment Strategy	21
References	23
Glossary	23
Acronyms and Abbreviations	24







Training Parameters

Sector	Telecom
Sub-Sector	Passive Infrastructure
Occupation	Operation and Maintenance – Passive Infrastructure
Country	India
NSQF Level	6
Aligned to NCO/ISCO/ISIC Code	NCO-2015/1330.0701
Minimum Educational Qualification & Experience	Pursuing first year of 2-year PG program after completing 3-year UG degree OR Pursuing 1-year PG diploma after 3-year UG degree OR Completed 4th year UG (in case of 4-year UG) OR Pursuing 4th year UG (in case of 4-year UG) and continuing education with No Experience Required OR Completed 3-Year UG Degree with 1-year relevant experience OR Previous relevant Qualification of NSQF Level 5 with 3 years relevant experience
Pre-Requisite License or Training	NA
Minimum Job Entry Age	25 Years
Last Reviewed On	30/12/2021
Next Review Date	30/12/2024
NSQC Approval Date	30/12/2021
QP Version	3.0
Model Curriculum Creation Date	30/12/2021
Model Curriculum Valid Up to Date	30/12/2024
Model Curriculum Version	1.0
Minimum Duration of the Course	600 Hours, 0 Minutes
Maximum Duration of the Course	600 Hours, 0 Minutes







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 should have acquired the listed knowledge and skills.

- Identify the role, responsibilities and scope of work of Telecom Cluster Manager
- Perform site management and repair/maintenance tasks
- Demonstrate how to supervise the site-maintenance, compliances and quality assurance
- Optimize resources, work efficiently and adhere to safety standards
- Interact effectively with others while being sensitive of gender and persons with disabilities

Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Durati on	Practic al Durati on	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
Bridge Module	20:00	10:00	00:00	00:00	30:00
Module 1: Introduction to the role of a Telecom Cluster Manger Bridge Module	20:00	10:00	00:00	00:00	30:00
TEL/N4109 – Manage repair, maintenance and service cost per site NOS Version No. 2.0 NSQF Level 6	70:00	80:00	60:00	00:00	210:00
Module 2: Repair and maintenance of work site	70:00	80:00	60:00	00:00	210:00
TEL/N4110 – Maintain site uptime, compliances and quality assurance NOS Version No. 2.0 NSQF Level 6	70:00	80:00	60:00	00:00	210:00
Module 3: Maintain compliances and quality at the worksite	70:00	80:00	60:00	00:00	210:00
TEL/N9103 – Implement effective interaction at work NOS Version No. 1.0 NSQF Level 6	10:00	20:00	00:00	00:00	30:00
Module 4: Communication and Interpersonal skills	10:00	20:00	00:00	00:00	30:00







TEL/N9104 – Manage work Resources and health at workplace NOS Version No. 1.0 NSQF Level 6	10:00	20:00	00:00	00:00	30:00
Module 5: Working effectively and optimizing resources for a safe workplace	10:00	20:00	00:00	00:00	30:00
DGT/VSQ/N0103 Employability Skills	90:00	00:00	00:00	00:00	90:00
Total Duration	270:00	210:00	120:00	00:00	600:00







Module Details

Module 1: Introduction to the Role of a Telecom Cluster Manager Mapped to Bridge Module

Terminal Outcomes:

- Describe the role and responsibilities to be performed by a Telecom Cluster Manager.
- Explain the scope of work for a Telecom Cluster Manager.

Duration : 20:00	Duration : 10:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
 Outline the course objectives and outcomes. Explain the pre-requisites for the course. Discuss the size and scope of the Telecom industry and Passive Infrastructure subsector. Examine opportunities for a Telecom Cluster Manager in the Passive Infrastructure sub-sector and the Telecom industry. Explain the responsibilities of a Cluster Manager. Describe the process workflow at a cluster site and the role of Cluster Manager in the process. List the various daily, weekly, monthly operations/activities that take place at the site under management of a Cluster Manager. Discuss the organisational policies on workplace ethics, managing sites, quality standards, personnel management and public relations (PR). 	 Chart the process flow of a cluster site management. Evaluate case studies outlining the role, responsibilities, and challenges for a Telecom Cluster Manager. Analyse the requirements for the course and prepare an action/learning plan for updating skills as per the pre-requisites of the course. Role play a Cluster Manager outlining the roles and responsibilities of and technicians/associates/in-charges at the site.

Classroom Aids:

Laptop, white board, marker, projector

Tools, Equipment and Other Requirements

Documents of standard operating procedures, code of conduct, checklists, schedules tools and equipment, job card, status report







Module 2: Repair and Maintenance of Worksite *Mapped to TEL/N4109*

Terminal Outcomes:

• Manage and monitor the site repair and maintenance tasks

Duration: 70:00	Duration: 80:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
 State the Operating Company (OPCOs) policies/standards and guidelines for budgeting and cost. Explain how to prepare a sample budget for repair and maintenance tasks keeping in mind cost requirements and financial constraints. List the steps for validating and allocating funds for site maintenance and expenses. Evaluate strategies to reduce cost and improve efficiency of the site. Define the relationship between OPCOs and Hub sites w.r.t the legal agreements such as MSA, SLA, etc., and how to reduce/leverage recurring penalties/fines. Explain the importance of coordinating with cluster in-charges (Cls) and other stakeholders to increase the business. Discuss how to resolve grievances/issues related to maintenance of site. Outline the organizational procedure to collate customer data from regional office to identify potential customers. Discuss common occurring problems and their solutions to reduce maintenance expenses. State the energy saving initiatives to be followed in the organization. Describe how to perform root cause analysis of faulty components. Explain how to evaluate site repair and maintenance reports obtained from different departments. List the commonly used formulas to calculate site expenses and relevant applications. 	 Perform compliance audit of preventive maintenance reports submitted by cluster in-charges and vendors. Record the sample data in appropriate formats to be filled by the cluster in-charges. Use intranet tools for obtaining repair requests, proposals, quotes and approval for budget. Perform the steps to calculate costs of cluster expenses and comparing it with the given budget. Demonstrate how to supervise and monitor repair/maintenance of AC, DG, PIU, /SMPS /IPMS and battery bank. Prepare a list of necessary support documents required to seek approval from regional office for extra budgetary allowance. Prepare a sample format to record different types of data for installation, repair, maintenance and other expenses onsite.
Classroom Aids:	







Laptop, white board, marker, projector

Tools, Equipment and Other Requirements

Network cables, tools and equipment, AC, DG, PIU, SMPS and battery bank, Sample of PM formats and checklists, Laptop with software such as MS Office and CRM







Module 3: Maintain Compliances and Quality at the Worksite *Mapped to TEL/4110*

Terminal Outcomes:

• Ensure the quality of performed tasks match the set standards

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Duration: 70:00	Duration: 80:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
 Define the basic concepts of site maintenance and alarm notification. Compare methods and indicators (or data) to review daily/weekly/monthly outage report received from all hub sites. Describe how to conduct root cause analysis for outages and breakdowns at the sites and design a plan to rectify outage faults. State the ways to interact with estate and security team to provide safety and security at site. Examine ways to review site-wise alarm functioning report. Discuss how to plan and execute a site visit to audit timely supply of quality material. Outline organizational procedures to request asset replacement, raise material requirements requests and reporting faults to the supervisor. Explain how to conduct compliance audit of preventive maintenance carried out by different stakeholders. Discuss the various monetary/non-monetary penalties applicable as per SLA to penalize the vendors State the safety, rewards, and repair and maintenance guidelines of the company. Compare and discuss measures to reduce pollution levels by using alternative sources of energy such as solar and bio energy. 	 Prepare a site visit plan while following organizational norms and procedures. Demonstrate how to use the software to update the material requirement to supply chain manager (SCM). Prepare a sample monthly budget for equipment maintenance works. Perform root cause analysis of the outage/breakdown for identifying recurring faults. Use software and applications for site maintenance, monitoring and alarm automation. Develop a strategy for quality audit assurance of site in coordination with central team. Model raising a purchase request (PR) and examining a work order Demonstrate the calculation of rewards/penalties amount based on site reports received. Prepare a format of the sample monthly budget to check-up the health status of the equipment.
Classroom Aids:	

Classroom Aids:

Laptop, white board, marker, projector

Tools, Equipment and Other Requirements

Sample of outage reports, alarm functioning report Purchase request (PR) and work order forms Formats/checklists for health status reports







Module 4: Communication and interpersonal skills *Mapped to TEL/N9103 v1.0*

Terminal Outcomes:

- Communicate effectively and develop interpersonal skills
- Develop sensitivity towards differently abled people.

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
 Identify roles and responsibilities and understand organisation's policies. List organisational guidelines for dress code, time schedules, language and other soft skill aspects. List the different methods of communication. Explain the importance of effective communication and interpersonal skills. Analyse the common reasons for interpersonal conflicts and ways of managing them effectively. Identify types of information needed by colleagues and its importance. Identify the need for implementing standards, guidelines and practices pertaining to gender sensitivity, including work ethics and workplace etiquettes. Explain the work ethics, workplace etiquettes as well as standards and guidelines for all genders and PwD. List health and safety requirements for persons with disability. List the rights, duties and benefits available at workplace for person with disability. Identify the process of recruiting people with disability for a specific job. Analyse the specific ways to help persons with disability overcome the challenges. 	 Demonstrate how to interact with superiors in terms of escalating problems, reporting work completion and receiving feedback. Apply team building skills to assist colleagues in maximizing effectiveness and efficiency of carrying out tasks. Demonstrate appropriate communication skills and etiquettes while interacting with others. Resolve conflicts with colleagues and adhere to commitment. Demonstrate ideal workplace ethics while interacting with colleagues with respect to sharing information, co-ordinating work and showing respect. Follow organisation's policy for working with team members. Illustrate importance of team goals over individual goals. Use inclusive language irrespective of the gender/ disability of the person. Demonstrate appropriate behaviour towards all genders and differently abled people.

Classroom Aids:

White board/ black board marker / chalk, duster, computer or Laptop attached to LCD projector

Tools, Equipment and Other Requirements

Sample of escalation matrix, organisation structure.







${\bf Module~5: Working~effectively~and~optimizing~resources~for~a~safe~workplace}$ Mapped to TEL/N9104 v1.0

Terminal Outcomes:

recyclable waste.

Plan work effectively, implement safety practices and optimize use of resources.				
Duration: 10:00	Duration : 20:00			
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes			
 List the importance of following the standard operating procedures of the company w.r.t. privacy, confidentiality and security. List the key performance indicators for the new tasks. Identify the opportunities for team building workshops and motivational trainings. List and explain work requirements to be followed by the team. Identify the issues with and handle them. Discuss correct way to show emotions at workplace. Describe the importance of timely completion of tasks. Explain the importance of providing and receiving feedback constructively. Analyse ways to optimize usage of resources. List the importance, cause and effect of greening of jobs. Identify different types of hazards such as illness, accidents, fires etc. List the causes of risks and potential hazards in a work area and ways to prevent them. List the steps to report accident and health related issues as per SOP. Explain the concept of waste management. List the methods of waste disposal. Identify the different categories of waste for the purpose of segregation. Differentiate between recyclable and non- 	 Demonstrate techniques to save on cost and time. Demonstrate routine cleaning of tools, equipment and machines to ensure team follows the same. Use resources such as water judiciously. Check for malfunctions in equipment and report as per SOP. Report any breaches in safety and security to the concerned person. Illustrate ways to keep work area clean such as mopping spills and leaks, cleaning grease stains etc. Check for spills and leaks and plug the same. Demonstrate segregation of types of hazardous waste. Illustrate steps to minimise waste. Illustrate proper waste disposal procedures and how to dispose-off hazardous waste. Illustrate ways to find exact cause of a problem and validate the same in case done by a team member. 			

• List electronic waste disposal procedures.

Classroom Aids:

White board/ black board marker / chalk, duster, computer or Laptop attached to LCD projector

Tools, Equipment and Other Requirements

Personal Protection Equipment: safety glasses, head protection, rubber gloves, safety footwear, warning signs and tapes, fire extinguisher and first aid kit







Module 6: On-the-Job Training Mapped to Cluster Manager

Mandatory Duration: 120:00 Recommended Duration: 00:00

Location: On-Site Terminal Outcomes

- 1. Conduct compliance audit of preventive maintenance reports submitted by cluster incharges and vendors.
- 2. Maintain sample data in appropriate formats to be filled by the cluster in-charges.
- 3. Ensure intranet tools are used properly for acquiring repair requests, proposals, quotes, and approval for budget.
- 4. Calculate costs of cluster expenses and compare it with the given budget.
- 5. Administer and monitor repair/maintenance of AC, DG, PIU, /SMPS /IPMS, and battery bank.
- 6. Create necessary support documents required to seek approval from the regional office.
- 7. Plan for a site visit plan while following organizational norms and procedures.
- 8. Use the software to update the material required to the supply chain manager (SCM).
- 9. Conduct root cause analysis of the outage/breakdown for identifying recurring faults.
- 10. Develop a strategy for quality audit assurance of site in coordination with the central team.
- 11. Guide team to raise a purchase request (PR) and examine a work order
- 12. Calculate rewards/penalties amount based on-site reports received.
- 13. Create a sample monthly budget to check up the health status of the equipment.







Module 7: DGT/VSQ/N0103 Employability Skills (90 hours)

Mapped to Cluster Manager

	tion: On-Site		
S.N o.	Module Name	Key Learning Outcomes	Duration (hours)
1.	Introduction to Employability Skills	 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. Research and prepare a note on different industries, trends, required skills and the available opportunities. 	3
2.	Constitutional values - Citizenship	 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. Demonstrate how to practice different environmentally sustainable practices. 	1.5
3.	Becoming a Professional in the 21st Century	 Discuss relevant 21st century skills required for employment. Highlight the importance of practicing 21st century skills like Self-Awareness, Behavior 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. Create a pathway for adopting a continuous learning mindset for personal and professional development. 	5
4.	Basic English Skills	 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. 	10
5.	Career Development & Goal Setting	 Create a career development plan. Identify well-defined short- and long-term goals. 	4
6.	Communication Skills	 Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette. Write a brief note/paragraph on a familiar topic. Explain the importance of communication etiquette including active listening for effective communication. Role play a situation on how to work collaboratively with others in a team. 	10
7.	Diversity & Inclusion	 Demonstrate how to behave, communicate, and conduct appropriately with all genders and PwD. Discuss the significance of escalating sexual harassment issues as per POSH act. 	2.5
8.	Financial and Legal Literacy	 Discuss various financial institutions, products, and services. Demonstrate how to conduct offline and online financial transactions, safely and securely and check 	10

LIST OF TOOLS & EQUIPMENT FOR EMPLOYABILITY SKILLS				
S No.	Name of the Equipment	Quantity		
1.	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)	As required		
2.	UPS	As required		
3.	Scanner cum Printer	As required		
4.	Computer Tables	As required		
5.	Computer Chairs	As required		
6.	LCD Projector	As required		
7.	White Board 1200mm x 900mm	As required		
Note: Abo	Note: Above Tools &Equipment not required, if Computer LAB is available in the institute.			







Annexure

Trainer Requirements (Cluster Manager)

Trainer Prerequisites						
Minimum Educational	Specialization	Relevant Industry Experience		Training Experience		Remarks
Qualification		Years	Specialization	Years	Specialization	
B.E./B.Tech/ BCA/B.SC	Science/Electronics/ Telecom/IT and other relevant field	3	Network Management	0	NA	Eligible for ToT Program

Trainer Certification					
Domain Certification	Platform Certification				
Job Role: "Cluster Manager NSQF Level 6" "TEL/Q4102 v3.0", Minimum accepted score is 80%.	Job Role: "Trainer (VET and Skills)", "MEP/Q2601" v2.0, Minimum accepted score is 80%.				







Assessor Requirements (Cluster Manager)

Assessor Prerequisites						
Minimum Specialization Educational		Relevant Industry Experience		Training Experience		Remarks
Qualification		Years	Specialization	Years	Specialization	
B.E./B.Tech/ BCA/B.SC	Science/Electronics/ Telecom/IT and other relevant field	3	Network Management	0	NA	Eligible for ToA Program

Assessor Certification					
Domain Certification	Platform Certification				
Job Role: "Cluster Manager TEL/Q4102 v3.0", Minimum accepted score is 80%.	Job Role: "Trainer (VET and Skills)", "MEP/Q2701" v2.0, Minimum accepted score is 80%.				







Trainer Requirements (Employability Skills 90 hours)

	Trainer Prerequisites						
Minimum Educational	Specialization	Relevant Industry Experience		Training Experience		Remarks	
Qualification		Years	Specialization	Years	Specialization		
Graduate/CITS	Any discipline			2	Teaching experience	Prospective ES trainer should:	
Current ITI trainers	Employability Skills Training (3 days full-time course done between 2019-2022)					 have good communication skills be well versed in English have digital skills 	
Certified current EEE trainers (155 hours)	from Management SSC (MEPSC)					 have attention to detail be adaptable have willingness to 	
Certified Trainer	Qualification Pack: Trainer (MEP/Q0102)					learn	

Trainer Certification					
Domain Certification	Platform Certification				
Certified in 90-hour Employability NOS (2022), with a minimum score of 80%	NA				
OR					
Certified in 120-hour Employability NOS (2022), with a minimum score of 80%					







Master Trainer Requirements (Employability Skills 90 hours)

Master Trainer Prerequisites							
Minimum Educational	Specialization	Relevant Industry Experience		Trainir	ng Experience	Remarks	
Qualification		Years	Specialization	Years	Specialization		
Graduate/CITS	Any discipline			3	Employability Skills curriculum training experience with an interest to train as well as orient other peer trainers	Prospective ES Master trainer should: • have good communication skills • be well versed in English	
Certified Master Trainer	Qualification Pack: Master Trainer (MEP/Q2602			3	EEE training of Management SSC (MEPSC) (155 hours)	 have basic digital skills have attention to detail be adaptable have willingness to learn be able to grasp concepts fast and is creative with teaching practices and likes sharing back their learning with others 	

Master Trainer Certification				
Domain Certification	Platform Certification			
Certified in 90-hour Employability NOS (2022), with a minimum score of 90%.	NA			
OR				
Certified in 120-hour Employability NOS (2022), with a minimum score of 90%				







Assessment Strategy

- 1. Assessment System Overview:
 - Batches are assigned to assessment agencies for conducting assessment on portal or email.
 - Assessment agencies send the assessment confirmation to VTP/TC looping SSC.
 - Assessment agency deploys the ToA certified Assessor for executing the assessment.
 - SSC monitors the assessment process and records.

2. Testing Environment:

- The training partners need to:
 - o Confirm that the centre is available at the same address as mentioned on the portal.
 - Check the duration of the training.
 - o Check the Assessment Start and End time to be as 10 a.m. and 5 p.m.
 - o If the batch size is more than 30, then there should be 2 Assessors.
 - Check that the allotted time to the candidates to complete Theory & Practical Assessmentis correct.
 - o Check the mode of assessment—Online (Tablet/Computer) or Offline (OMR/PP).
 - Confirm the number of devices on the ground are correct to execute the Assessmentsmoothly.
 - o Check the availability of the Lab Equipment for the particular Job Role.

3. Assessment Quality Assurance levels/Framework:

- Question papers are created by the Subject Matter Experts (SME).
- Question papers created by the SME are verified by the other SMEs.
- Questions are mapped with NOS and PCs.
- Question papers are prepared considering that level 1 to 3 are for the unskilled & semiskilledindividuals, and level 4 and above are for the skilled, supervisor and higher management.
- Assessor must be ToA certified and trainer must be ToT Certified.
- Assessment agency must follow the assessment guidelines to conduct the assessment.

4. Types of evidence or evidence-gathering protocol:

- Time-stamped and geotagged reporting of the assessor from assessment location.
- Centre photographs with signboards and scheme specific branding should be provided.
- Biometric or manual attendance sheet (stamped by TP) of the trainees during the trainingperiod should be taken.
- Time-stamped and geotagged assessment (Theory + Viva + Practical) photographs andvideos should be provided to SSC.

5. Method of verification or validation:

- Surprise visits to the assessment location.
- Random audit of the batch.
- · Random audit of any candidate.

- 6. Method for assessment documentation, archiving, and access
 - Hard copies of the documents are stored.
 - Soft copies of the documents with photographs of the assessment are uploaded/accessedfrom Cloud.
 - Soft copies of the documents/photographs of the assessment are stored in the Hard Drives.

Assessment Strategy (Employability Skills 90 hours)

The trainee will be tested for the acquired skill, knowledge and attitude through formative/summative assessment at the end of the course and as this NOS and MC is adopted across sectors and qualifications, the respective AB can conduct the assessments as per their requirements.







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
SOP	Standard Operating Procedures
SCM	Supply Chain Manager
AC	Air Conditioner
DG	Diesel Generator
PIU	Power Interface Unit
SMPS	Switch Mode Power Supply
ВВ	Battery Bank
PwD	Persons with Disabilities
SLA	Service Level Agreement
PR	Public Relations
OPCOs	Operating Companies
ES	Employability Skills