Model Curriculum

QP Name: Telecom Electrician (Basic)

QP Code: TEL/Q4304

QP Version: 1.0

NSQF Level: 3

Model Curriculum Version: 1.0

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

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Training Parameters

Sector	Telecom
Sub-Sector	Passive Infrastructure
Occupation	Customer Service/ Passive Infrastructure
Country	India
NSQF Level	3
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7422.9900
Minimum Educational Qualification and Experience	10th grade pass (or equivalent) OR 9th grade pass with 1 Years of experience OR 8th grade pass with 2 Years of experience
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	NA
Next Review Date	31.01.2027
NSQC Approval Date	31.01.2024
QP Version	1.0
Model Curriculum Creation Date	31.01.2024
Model Curriculum Valid Up to Date	31.01.2027
Model Curriculum Version	1.0
Minimum Duration of the Course	390 hours
Maximum Duration of the Course	390 hours

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 to:

- Describe the size and scope of the Telecom industry and its sub-sectors.
- Discuss the role and responsibilities of a Telecom Electrician and identify various employment opportunities in this field.
- Define fundamental components in electronic circuits, recall Ohm's Law, apply Kirchhoff's laws, design circuits, simulate AC waveforms, and analyze circuit behaviors using simulation software.
- Develop and implement standardized electrical procedures for telecom infrastructure to enhance operational efficiency and safety.

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	**20:00**	**10:00**	**00:00**	**-**	**30:00**
Module 1: Introduction to the role of a Telecom Electrician	20:00	10:00	00:00	-	30:00
TEL/N4306: Optimize DC and AC Circuits with RLC Components NOS Version-1.0 NSQF Level- 3	**10:00**	**20:00**	**00:00**	**-**	**30:00**
Module 2: DC and AC Circuits Optimization with RLC Components	10:00	20:00	00:00	-	30:00
TEL/N4307: Operate series and parallel circuit using circuit simulation software NOS Version-1.0 NSQF Level- 3	**10:00**	**20:00**	**30:00**	**-**	**60:00**
Module 3: Simulation-Based Operation of Series and Parallel Circuits	10:00	20:00	30:00	-	60:00

TEL/N4308: Work with DC power supply system NOS Version-1.0 NSQF Level- 3	**20:00**	**40:00**	**30:00**	-	**90:00**
Module 4: DC Power Supply Systems Operations and Management	20:00	40:00	30:00	-	90:00
TEL/N4309: Test the power backup system to ensure proper working of DC-DC converter, battery, and controller NOS Version-1.0 NSQF Level- 3	**10:00**	**20:00**	**60:00**	**-**	**90:00**
Module 5: Power Backup System Testing	10:00	20:00	60:00	-	90:00
TEL/N4310: Install the surge protection system NOS Version-1.0 NSQF Level- 3	**10:00**	**20:00**	**00:00**	-	**30:00**
Module 6: Surge Protection System Installation Procedures	10:00	20:00	00:00	-	30:00
TEL/N9101: Organise Work and Resources as per Health and Safety Standards NOS Version-1.0 NSQF Level-3	**10:00**	**20:00**	**00:00**	-	**30:00**
Module 7: Process of organising work and resources as per health and Safety standards	10:00	20:00	00:00	-	30:00
DGT/VSQ/N0101: Employability Skills (30 Hours) NOS Version No. 1 NSQF Level- 2	**30:00**	**00:00**	**00:00**	-	**30:00**
Employability Skills (30 Hours)	30:00	00:00	00:00	-	30:00
Total Duration	**120:00**	**150:00**	**120:00**	-	**390:00**

Module Details

Module 1: Introduction to the role of a Telecom Electrician (Basic)

Bridge Module

Terminal Outcomes:

- Discuss the job role of a Telecom Electrician (Basic).
- Explain the scope of work for a Telecom Electrician (Basic).

Duration: *20:00*	**Duration**: *10:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe the size and scope of the Telecom industry and its sub-sectors. • Discuss the role and responsibilities of a Telecom Electrician (Basic). • Identify various employment opportunities for a Telecom Electrician (Basic). • Discuss the organisational policies on workplace ethics, managing sites, quality standards, personnel management and public relations (PR). • Describe the process workflow in the organization and the role of a Telecom Electrician (Basic). • List the various daily, weekly, monthly operations/activities that take place at the site under a Telecom Electrician (Basic).	• Role play based on case studies, outlining the scope, responsibilities, and challenges of a Telecom Electrician (Basic). • Analyse the requirements for the course and prepare for the pre-requisites of the course.
Classroom Aids:	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
NA	

Module 2: DC and AC Circuits Optimization with RLC Components

Mapped to NOS: TEL/N4306, v1.0

Terminal Outcomes:

- Define the fundamental components in electronic circuits (resistors, voltage sources, and current sources).
- Describe the equations for calculating power dissipation in circuits (P = IV and P = I^2R).
- Calculate power dissipation and understand how it relates to the efficiency of components.
- Design circuits with capacitors to offset inductive loads and improve power factor.

Duration: *10:00*	**Duration**: *20:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Define the fundamental components in electronic circuits (resistors, voltage sources, and current sources). • Recall Ohm's Law (V = IR) and its application in relating voltage, current, and resistance. • Describe the equations for calculating power dissipation in circuits (P = IV and P = I^2R). • Explain the principles of Kirchhoff's Current Law (KCL) and Kirchhoff's Voltage Law (KVL). • Explain the concept of series and parallel connections of components in circuits. • Describe the significance of selecting components with appropriate specifications to match design requirements. • Understand the importance of balancing series and parallel connections to distribute loads evenly. • Comprehend the benefits of using circuit simulation software for modeling and analyzing circuits. • Apply KCL and KVL to solve complex circuits with multiple elements and loops.	• Analyze simple circuits with resistors, voltage sources, and current sources practically. • Resolve and repair issues related to series and parallel connections of voltage, current, and resistance. • Choose components with appropriate specifications to match design requirements for real-world applications. • Optimize circuits to minimize power losses by selecting efficient components and resistors. • Implement components to distribute loads uniformly and reduce stress on circuits in practice. • Simulate AC waveforms with desired characteristics (amplitude, frequency, and phase) using practical tools. • Design circuits with capacitors to offset inductive loads and improve power factor. • Use thicker conductors to reduce energy loss as heat effectively. • Install voltage regulators and filters to maintain stable output voltage and reduce harmonics practically. • Choose and implement transformers

• Calculate power dissipation and understand how it relates to the efficiency of components. • Use voltage dividers and current dividers to achieve desired voltage or current levels. • Balance series and parallel connections practically in circuits.	with high efficiency and appropriate turns ratios for voltage transformation in real-world applications. • Ensure proper grounding and select components with lower ESR and higher Q factors for better performance practically. • Analyze circuits practically using Kirchhoff's laws and impedance/admittance relationships to determine current, voltage, and resonance conditions. • Select appropriate component values (R, L, C) based on desired frequency response and application requirements in real-world scenarios. • Design circuits for resonance frequency to achieve specific peak responses practically. • Implement power factor correction practically to improve system efficiency and reduce costs. • Simulate and analyze circuits using software tools like SPICE to predict their behavior accurately. • Regularly monitor and maintain circuit performance, especially in power factor correction setups, in a practical setting. • Analyze a circuit's behavior across a range of frequencies, specifically at resonance, where current and voltage can be significantly affected in practical applications.

Classroom Aids:
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films
Tools, Equipment and Other Requirements
Breadboards, Resistors, Voltage sources (Power supplies), Current sources, Multimeters, Oscilloscopes, Capacitors, Inductors, Transformers, Voltage regulators, Filters, Thicker conductors, Circuit simulation software (e.g., SPICE), AC waveform generators, Impedance and admittance analysers, Power factor correction components, Grounding equipment, ESR meters, Q factor meters, Frequency response analysers, Maintenance tools (screwdrivers, pliers, etc.)

Module 3: Simulation Based Operation of Series and Parallel Circuits

Mapped to NOS: TEL/N4307, v1.0

Terminal Outcomes:

- Explain the significance of setting resistance and voltage values in circuit simulation.
- Differentiate between the measured current and voltage values to identify trends and variations.
- Evaluate the impact of value changes on circuit performance and behavior.

Duration: *10:00*	**Duration**: *20:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Recall the names of various Circuit Simulation Software tools. • Recognize the purpose of ammeters and voltmeters in circuit analysis. • Explain the significance of setting resistance and voltage values in circuit simulation. • Describe the function of ammeters and voltmeters in measuring current and voltage in a circuit. • Demonstrate the ability to open and create a new project in a Circuit Simulation Software. • Apply knowledge of circuit design to connect components correctly. • Analyze the results of the simulation to understand how changing component values impact circuit behavior. • Differentiate between the measured current and voltage values to identify trends and variations.	• Configure resistance values for the resistors in the circuit accurately. • Set voltage values for voltage sources following the circuit design. • Run simulations effectively to observe how changing values affect current distribution and voltage drops. • Interpret the results to make informed decisions about circuit modifications. • Assess the accuracy of ammeter and voltmeter measurements to ensure reliable data. • Evaluate the impact of value changes on circuit performance and behavior. • Create and modify complex circuit designs using Circuit Simulation Software. • Develop hypotheses and experiment with different component values to achieve specific circuit outcomes.
Classroom Aids:	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
Circuit Simulation Software (e.g., SPICE), Ammeters, Voltmeters, Resistors, Voltage Sources, Computer or Laptop, Project Board or Breadboard, Connecting Wires, Multimeter, Circuit Board.	

Module 4: DC Power Supply Systems Operations and Management

Mapped to NOS: TEL/N4308, v1.0

Terminal Outcomes:

- Understand the voltage and current requirements of electronic devices and their significance in power supply design.
- Explain the concept of steady output voltage and its importance in electronic circuits.
- Power up a practical circuit and use a multimeter to measure and adjust the output voltage and current.
- Design power supplies with voltage regulation and galvanic isolation features for specific applications during hands-on training.

Duration: *20:00*	**Duration**: *40:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Understand the voltage and current requirements of electronic devices and their significance in power supply design. • Describe the different types of DC power supplies and their applications in electronics. • Explain the importance of maintaining a constant output voltage in power supplies, even when input conditions change. • Analyze the role of transformers in converting input AC voltage to the desired output AC voltage. • Understand the purpose of capacitors in smoothing pulsating DC voltage and their impact on power supply stability. • Explain the concept of steady output voltage and its importance in electronic circuits. • Discuss the use of current limiting in power supplies for protection and safety. • Calculate the transformer turns ratio for specific voltage conversion requirements. • Describe the sequential connection of components in a power supply	• Identify the voltage and current requirements of a specific electronic device. • Select the appropriate type of DC power supply for a given application. • Implement voltage regulation to maintain a stable output voltage in a practical power supply circuit. • Choose and connect a suitable transformer for voltage conversion in a hands-on electronics project. • Place and calculate the value of a smoothing capacitor to reduce pulsations in the output voltage. • Construct a power supply circuit that ensures a steady output voltage in real-world scenarios. • Set up a current-limiting feature in a power supply for protection and practical use. • Calculate the turns ratio of a transformer for voltage transformation as part of a class project. • Assemble and connect electronic components based on a provided power supply design. • Power up a practical circuit and use a

circuit based on a design plan. ● Interpret multimeter readings to measure and evaluate the output voltage and current of a power supply. ● Explain the procedure for adjusting voltage regulators to achieve the desired output voltage. ● Understand the function of AC waveform blocking and utilization in power supply circuits. ● Describe the advantages and disadvantages of utilizing both halves of the AC input waveform. ● Explain the role of filter capacitors in reducing ripple and stabilizing the pulsating DC waveform. ● Define voltage regulation and galvanic isolation in the context of power supply design.	multimeter to measure and adjust the output voltage and current. ● Make real-time adjustments to voltage regulators to achieve the desired output voltage. ● Work with practical AC waveforms by allowing one half to pass through and blocking the other half. ● Build and experiment with circuits that utilize both halves of the AC input waveform. ● Add filter capacitors to a practical power supply circuit to reduce ripple and enhance stability. ● Design power supplies with voltage regulation and galvanic isolation features for specific applications during hands-on training.
Classroom Aids:	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
Multimeter, Power supply unit, Transformers, Capacitors, Voltage regulators, Electronic components (resistors, diodes, etc.), Breadboards, Wiring and connectors, AC waveform generator, Filter capacitors, Safety equipment (gloves, safety glasses), Soldering iron and solder	

Module 5: Power Backup System Testing

Mapped to NOS: TEL/N4309, v1.0

Terminal Outcomes:

- Interpret the role of a controller in a battery charging system.
- Create and execute test scenarios for simulating fault conditions in a power backup system.
- Develop a procedure for integrating components into a full power backup system.

Duration: *10:00*	**Duration**: *20:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the components and their connections in a power backup system. • Describe the safety precautions when working with power systems. • Summarize the purpose of a DC-DC converter and its typical operating range. • Interpret the role of a controller in a battery charging system. • Demonstrate how to measure and monitor the output voltage of a DC-DC converter. • Apply the efficiency formula to calculate the efficiency of a DC-DC converter. • Show the steps to calculate battery capacity based on discharge time and current. • Differentiate between the safe charging and discharge voltage ranges for batteries. • Analyze the functions and responses of a controller under varying conditions. • Compare the efficiency of different DC-DC converters. • Create and execute test scenarios for simulating fault conditions in a power backup system. • Develop a procedure for integrating components into a full power backup	• In a controlled environment, assemble and connect a DC-DC converter, battery, and controller in a power backup system. • Identify and rectify loose connections or damaged components before testing. • Analyze the behavior of a power backup system during transitions and verify voltage regulation and protection mechanisms. • Create practical setups to measure input and output power using appropriate instruments. • Develop a testing procedure for simulating fault conditions and ensuring proper responses. • Integrate real components into a functioning power backup system and assess its performance during power outage simulations. • Evaluate the efficiency of a DC-DC converter based on practical measurements. • Assess the behavior of the power backup system during discharging and charging processes. • Conduct practical tests to verify the UPS system's ability to protect connected devices.

system. ● Design a test plan to ensure the seamless transition from AC to battery power. ● Assess the suitability of different types of UPS systems (online, offline, line-interactive) based on specific needs. ● Evaluate the responsiveness and data accuracy of a controller in a power backup system.	
Classroom Aids:	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
Multimeter, Resistor, Capacitor, DC-DC Converter, Battery, Controller, UPS Systems, Safety gears.	

Module 6: Surge Protection System Installation Procedures

Mapped to NOS: TEL/N4310, v1.0

Terminal Outcomes:

- Explain potential sources of surges, such as lightning strikes and power grid fluctuations.
- Describe the role of grounding standards in surge protection.

Duration: *10:00*	**Duration**: *20:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe critical electrical and electronic equipment that require surge protection. • Explain potential sources of surges, such as lightning strikes and power grid fluctuations. • Define the different types of surge protection devices (SPDs) and their purposes. • Explain the importance of matching SPD voltage ratings to the system's operating voltage. • Describe the role of grounding standards in surge protection. • Understand the significance of avoiding sharp bends in wiring to minimize impedance. • Explain the importance of matching SPD voltage ratings to the system's operating voltage. • Describe the role of grounding standards in surge protection. • Understand the significance of avoiding sharp bends in wiring to minimize impedance.	• Explain the importance of matching SPD voltage ratings to the system's operating voltage. • Describe the role of grounding standards in surge protection. • Understand the significance of avoiding sharp bends in wiring to minimize impedance. • Explain the importance of matching SPD voltage ratings to the system's operating voltage. • Describe the role of grounding standards in surge protection. • Understand the significance of avoiding sharp bends in wiring to minimize impedance. • Explain the importance of matching SPD voltage ratings to the system's operating voltage. • Describe the role of grounding standards in surge protection. • Understand the significance of avoiding sharp bends in wiring to minimize impedance.
Classroom Aids:	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
Multimeter, Insulation Resistance Tester, Cable Tester, Surge Protectors, Protective Relays, Circuit Breakers, Fuses, Firewalls, Access Controls	

Module 7: Process of organizing work and resources as per health and safety standards

Mapped to NOS: TEL/N9101, v2.0

Terminal Outcomes:

- Explain the importance of performing work as per quality standards.
- Explain the importance of maintaining a safe, healthy and secure working environment.
- Explain the importance of conserving material/energy/electricity.
- Describe the process of using effective waste management/recycling practices.

Duration: *10:00*	**Duration**: *20:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain various strategies pertinent to their field (such as internet searches, asking peers and managers, enrolling for courses and certifications, etc.) that can be used to pursue advancement in their skills. • State key performance indicators for the new tasks. • Describe feedback processes and formats. • Explain timelines and goals as well as their relevance to work allocated. • Explain the importance of quality and timely delivery of the product/service. • Explain the escalation matrix and its importance, especially in case of emergencies. • Explain various ways of time and cost management. • State the rules/regulations for maintaining health and safety at the workplace. • Explain the meaning of hazard, different types of health and safety hazards found in the workplace, risks and threats based on the nature of work. • Explain the relevant signage, warnings, labels or descriptions on equipment, etc. while carrying out work activities.	• Demonstrate how to record/document tasks completed as per the requirements within specific timelines. • Show how to analyse problems accurately and communicate different possible solutions to the problem. • Demonstrate how to report any identified breaches in health, safety, and security policies and procedures to the designated person. • Demonstrate the process of using safety materials such as goggles, gloves, earplugs, caps, ESD pins, covers, shoes, etc. • Demonstrate the process of handling heavy and hazardous materials with care, while maintaining appropriate posture. • Demonstrate the process of carrying out routine cleaning of tools, machines and equipment. • Demonstrate ways to optimise the use of electricity/energy in various tasks/activities/processes. • Demonstrate the process of performing periodic checks of the functioning of the equipment/machine and rectify wherever required. • Demonstrate ways to use electrical equipment and appliances properly

• Describe the procedures to report breaches in health, safety and security. • Describe the organisation's procedures for different emergency situations and the importance of following the same. • Describe different methods of cleaning, disinfection, sterilization, and sanitization. • Explain the significance of personal hygiene practice including hand hygiene. • Explain the path of disease transmission. • Describe the correct method of donning and doffing of PPE. • Explain different ways of managing resources and material efficiently. • Explain common electrical problems and common practices of conserving electricity. • Explain categorization of waste into dry, wet, recyclable, non-recyclable and items of single-use plastics and use of different colours of dustbins. • Describe the organisation's procedures for minimizing waste. • Explain waste management and methods of waste disposal. • State common sources of pollution and ways to minimize it.	• Demonstrate the process of disposing non-recyclable and hazardous waste as per recommended processes.
Classroom Aids:	
Training Kit (Trainer **G**uide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Relevant stationery, First Aid Kit and Equipment used in Medical Emergencies.	

Module 8: Employability Skills

Mapped to NOS: DGT/VSQ/N0101

Mandatory Duration: 30:00			
Location: On-Site			
S.No.	**Module Name**	**Key Learning Outcomes**	**Duration(hours)**
1.	Introduction to Employability Skills	• Discuss the importance of Employability Skills in meeting the job requirements.	1 Hours
2.	Constitutional values - Citizenship	• Explain constitutional values, civic rights, duties, citizenship, responsibility towards society etc. that are required to be followed to become a responsible citizen • Show how to practice different environmentally sustainable practices.	1 Hours
3.	Becoming a Professional in the 21st Century	• Discuss 21st century skills. • Display positive attitude, self - motivation, problem solving, time management skills and continuous learning mindset in different situations.	1 Hours
4.	Basic English Skills	• Use appropriate basic English sentences/phrases while speaking	2 Hours
5.	Communication Skills	• Demonstrate how to communicate in a well - mannered way with others. • Demonstrate working with others in a team.	4 Hours
6.	Diversity & Inclusion	• Show how to conduct oneself appropriately with all genders and PwD. • Discuss the significance of reporting sexual harassment issues in time.	1 Hours
7.	Financial and Legal Literacy	• Discuss the significance of using financial products and services safely and securely. • Explain the importance of managing expenses, income, and savings. • Explain the significance of approaching the concerned authorities in time for any exploitation as per legal rights and laws.	4 Hours
8.	Essential Digital Skills	• Show how to operate digital devices and use the associated applications and features, safely and securely. • Discuss the significance of using internet for browsing, accessing social media platforms, safely and securely.	3 Hours

9.	Entrepreneurship	• Discuss the need for identifying opportunities for potential business, sources for arranging money and potential legal and financial Challenges.	7 Hours
10.	Customer Service	• Differentiate between types of customers. • Explain the significance of identifying customer needs and addressing them. • Discuss the significance of maintaining hygiene and dressing appropriately.	4 Hours
11.	Getting ready for apprenticeship & Jobs	• Create a biodata. • Use various sources to search and apply for jobs. • Discuss the significance of dressing up neatly and maintaining hygiene for an interview. • Discuss how to search and register for apprenticeship opportunities.	2 Hours

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: Above Tools &Equipment not required, if Computer LAB is available in the institute.		

Module 9: On-the-Job Training

Mapped to Telecom Electrician (Basic)

Mandatory Duration: 12*0:00*	**Recommended Duration:** *00:00*
Module Name: On-the-Job Training **Location: On Site**	
1. Demonstrate proficiency in installing, maintaining, and repairing telecommunications equipment and systems. 2. Perform cable terminations and splicing according to industry standards. 3. Install and configure basic telecom devices such as routers, switches, and modems. 4. Demonstrate knowledge of safety equipment and procedures, including the use of personal protective equipment (PPE). 5. Record and document tasks completed in accordance with specific timelines. 6. Report any identified breaches in health, safety, and security policies and procedures promptly to the designated person. 7. Demonstrate the proper handling and care of telecom equipment. 8. Conduct routine cleaning of tools, machines, and equipment.	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
3 yrs in Engg. Diploma after 10th class	Electrical/Electronics	4	Eligible for ToT program	0	NA	Eligible for ToT program
Graduate (B.E/B.Tech)	Electrical/Electronics	1	Eligible for ToT program	0	NA	Eligible for ToT program
3 yrs in Engg. Diploma after 10th class	Electrical/Electronics			8	Teaching Experience	
Graduate (B.E/B.Tech)	Electrical/Electronics			2	Teaching Experience	

Trainer Certification	
Domain Certification	**Platform Certification**
Job Role "**Telecom Electrician (Basic)**", "TEL/Q4304, v1.0", Minimum accepted score is 80%.	Trainer is certified for the job role **"Trainer (VET & SKILLS)"**; mapped to Qualification Pack: - "MEP/Q2601, v2.0" with minimum 80% of score.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training/Assessment Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
3 yrs in Engg. Diploma after 10th class	Electrical/Electronics	4	Eligible for ToT program	0	NA	Eligible for ToA program
Graduate (B.E/B.Tech)	Electrical/Electronics	1	Eligible for ToT program	0	NA	Eligible for ToA program

Assessor Certification	
Domain Certification	**Platform Certification**
Job Role "**Telecom Electrician (Basic)**", "TEL/Q4304, v1.0", Minimum accepted score is 80%	Assessor is certified for the job role **"Assessor (VET & SKILLS)"**; mapped to Qualification Pack: - "MEP/Q2701, v2.0" with minimum 80% of score.

Trainer Requirements (Employability Skills 30 hours)

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

Trainer Certification	
Domain Certification	**Platform Certification**
Certified in 30-hour Employability NOS (2022), with a minimum score of 80% OR Certified in 120- OR 90- OR 60-hour Employability NOS (2022), with a minimum score of 80%	NA

Master Trainer Requirements (Employability Skills 30 hours)

Master Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		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 trainer should: • have good communication skills • be well versed in English • have digital skills • have attention to detail • be adaptable • have willingness to learn
Certified Master Trainer	Qualification Pack: Master Trainer			3	EEE training of Management SSC (MEPSC) (155 hours)	

Master Trainer Certification	
Domain Certification	**Platform Certification**
Certified in 30-hour Employability NOS (2022), with a minimum score of 90%. OR Certified in 120- OR 90- OR 60-hour Employability NOS (2022), with a minimum score of 90%	NA

Assessment Strategy

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

2. Testing Environment:
   - Confirm that the centre is available at the same address as mentioned on SDMS or SIP.
   - Check the duration of the training.
   - Check the Assessment Start and End time to be as 10 a.m. and 5 p.m.
   - 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 Assessment is correct.
   - Check the mode of assessment—Online (TAB/Computer) or Offline (OMR/PP).
   - Confirm the number of TABs on the ground are correct to execute the Assessment smoothly.
   - Check the availability of the Lab Equipment for the particular Job Role.

3. Assessment Quality Assurance levels / Framework:
   - Question papers created by the Subject Matter Experts (SME).
   - Question papers created by the SME verified by the other subject Matter Experts.
   - Questions are mapped with NOS and PC.
   - Question papers are prepared considering that level 1 to 3 are for the unskilled & semi- skilled individuals, and level 4 and above are for the skilled, supervisor & higher management.
   - An assessor must be ToA certified & the trainer must be ToT Certified.
   - The assessment agency must follow the assessment guidelines to conduct the assessment.

4. Types of evidence or evidence-gathering protocol:
   - Time-stamped & geotagged reporting of the assessor from assessment location.
   - Center photographs with signboards and scheme-specific branding.
   - Biometric or manual attendance sheet (stamped by TP) of the trainees during the training period.
   - Time-stamped & geotagged assessment (Theory + Viva + Practical) photographs & videos.

5. Method of verification or validation:
   - A surprise visit to the assessment location.
   - A 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 & photographs of the assessment are uploaded / accessed from Cloud Storage.
    - Soft copies of the documents & photographs of the assessment are stored in the Hard Drives.

Assessment Strategy (Employability Skills 30 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	A key learning outcome is a 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	The 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
NOS	National Occupational Standard (s)
NSQF	National Skills Qualifications Framework
OJT	On-the-job Training
QP	Qualifications Pack
PwD	People with Disability
PPE	Personal Protective Equipment