



Model Curriculum

QP Name: Broadband Network Technician

QP Code: TEL/Q4110

QP Version: 1.0

NSQF Level: 4

Telecom Sector Skill Council ||

Table of Contents

Training Parameters.....	3
Program Overview	4
Training Outcomes.....	4
Compulsory Modules	4
Module Details.....	7
Module 1: Role and Responsibilities of an Optical Fiber Technician	7
Module 2: Carry Out Inspection of Route Plan	8
Module 3: Co-ordinate the Activities for cable laying and pulling	9
Module 4: Perform Planned Maintenance and Repair Activities	10
Module 5: Perform Corrective Maintenance Activities	11
Module 6: Introduction to the Role of a Broadband Network Technician	12
Module 7: Install Cable/System Wiring and Equipment at Customer Premises	13
Module 8: Configure Equipment and Establish Broadband Connectivity	15
Module 9: Troubleshoot and Rectify Faults.....	17
Module 10: Maintain Workplace Safety, Resource Optimization, and hygiene standards.....	19
Module 11: Operational Skills.....	21
Module 12: DGT/VSQ/N0101: Employability Skills (30 Hours).....	22
Module 13: On-the-Job Training.....	26
Annexure.....	28
Trainer Requirements	28
Assessor Requirements.....	29
References	30
Glossary.....	30
Acronyms and Abbreviations.....	32

Training Parameters

Sector	Telecom
Sub-Sector	Service Provider
Occupation	Broadband Installation & Maintenance
Country	India
NSQF Level	4
Credits	20
Aligned to NCO/ISCO/ISIC Code	NCO-2015//3114.0804
Minimum Educational Qualification & Experience	12th Grade Pass OR Completed 2nd year of 3-year diploma after 10th (Diploma in Telecommunications/ Electronics/ IT/ AI/ Computer science/Industrial/Electrical etc. or a combination of these). OR Previous relevant Qualification of NSQF Level 3.5 with 1.5-year relevant experience OR Previous relevant Qualification of NSQF Level 3 with 3-year relevant experience
Minimum Level of Education for Training in School	12 th Class
Pre-Requisite License or Training	
Minimum Job Entry Age	NA
Last Reviewed On	30-09-2025
Next Review Date	30-09-2028
NSQC Approval Date	30-09-2025
Version	1.0
Reference code on NQR	QG-04-TL-04422-2025-V1-TSSC
NQR Version	1.0
Minimum Duration of the Course	600 hours
Maximum Duration of the Course	600 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.

- Perform coordinating activities for cable laying and pulling
- Perform efficient protective and corrective maintenance procedures
- Discuss how to maintain OTDR (Optical TimeDomain Reflectometer) register
- Install cable/system wiring and equipment at customer premises
- Configure equipment and establish Broadband connectivity
- Troubleshoot and rectify the faults
- 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 Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
TEL/N6281: Install and Commission Optical Fiber Cables for Broadband Networks NOS Version No. 1.0 NSQF Level 4	45:00	70:00	35:00		150:00
Module 1: Role and Responsibilities of an Optical Fiber Technician	15:00	15:00	10:00		40:00
Module 2: Carry Out Inspection of Route Plan	10:00	15:00	10:00		35:00
Module 3: Co-ordinate the Activities for Cable Laying and Pulling	20:00	40:00	15:00		75:00

TEL/N6282: Perform Preventive and Corrective Maintenance of Optical Fiber Networks NOS Version No. 1.0 NSQF Level 4	35:00	60:00	40:00		135:00
Module 4: Perform Planned Maintenance and Repair Activities	20:00	30:00	20:00		70:00
Module 5: Perform Corrective Maintenance Activities	15:00	30:00	20:00		65:00
TEL/N6283: Install and Configure Customer Premises Equipment (CPE) for Broadband Services NOS Version No. 1.0 NSQF Level 4	50:00	65:00	35:00		150:00
Module 6: Introduction to the Role of Broadband Technician	15:00	10:00	5:00		30:00
Module 7: Install Cable/System Wiring and Equipment at Customer Premises	15:00	30:00	15:00		60:00
Module 8: Configure Equipment and Establish Broadband Connectivity	20:00	25:00	15:00		60:00
TEL/N6284: Troubleshoot and Rectify Broadband Network Faults NOS Version No. 1.0 NSQF Level 4	30:00	35:00	40:00		105:00
Module 9: Troubleshoot and Rectify Faults	30:00	35:00	40:00		105:00
TEL/N6285: Maintain Workplace Safety, Resource Optimization, and Hygiene Standards NOS Version No. 1.0	05:00	10:00			15:00

NSQF Level 4					
Module 10: Maintain Workplace Safety, Resource Optimization, and Hygiene Standards	05:00	10:00	00:00		15:00
TEL/N6287: Operational Skills NOS Version No. 1.0 NSQF Level 4	05:00	10:00			15:00
Module 11: Operational Skills	05:00	10:00	00:00		15:00
DGT/VSQ/N0101 - Employability Skills (30 hours) NOS Version No. – 1.0 NSQF Level – 2	30:00	00:00			30:00
Module 12: Employability Skills	30:00	00:00	00:00		30:00
Total Duration	200:00	250:00	150:00		600:00

Module Details

Module 1: Role and Responsibilities of an Optical Fiber Technician

Mapped to TEL/N6281 & v1.0

Terminal Outcomes:

- Describe the role and responsibilities of an Optical Fiber Technician.
- Explain the scope of work for an Optical Fiber Technician.

Duration: 15:00	Duration: 15:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
• Discuss the size and scope of the Telecom industry and Passive Infrastructure sub-sector. • Identify the roles and responsibilities of an Optical Fiber Technician. • Discuss the career progression of an Optical Fiber Technician in the Telecom industry. • Explain the fundamentals and concept of telecommunication and the terminologies used in the work process.	• Maintaining uptime and quality of the network segment (both optical media & equipment). • Preventive maintenance activities and ensuring effective fault management in case of fault occurrence. • Perform coordinating activities for installation and commissioning of Optical Fibre Cable (OFC) as per the route plan.
Classroom Aids:	
Participant handbook, Training Kit (Trainer Guide, Presentations), Whiteboard, marker pen, computer or laptop attached to LCD projector, scanner, computer speakers	
Tools, Equipment and Other Requirements	

Module 2: Carry Out Inspection of Route Plan

Mapped to TEL/N6281 & v1.0

Terminal Outcomes:

- Perform the inspection procedure of the route plan.

Duration: 10:00	Duration: 15:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
• Discuss the significance of an effective route inspection. • Explain the pre-requisites to verify the proposed route to ensure that bend ratios meet manufacturer specifications and industry standards. • Discuss the procedure to develop installation work plan. • Explain various types of permissions required for installation works. • Describe various optical fiber modes (Single mode or multi-mode) and configurations based on types of the location.	• Apply appropriate practices to verify the proposed route to ensure that bend ratios meet manufacturer specifications and industry standards. • Prepare sample installation workplan. • Demonstrate how to liaise with the concerned authorities for obtaining clearances.
Classroom Aids:	
Participant handbook, Training Kit (Trainer Guide, Presentations), Whiteboard, marker pen, computer or laptop attached to LCD projector, scanner, computer speakers	
Tools, Equipment and Other Requirements	

Module 3: Co-ordinate the Activities for cable laying and pulling

Mapped to TEL/N6281 & v1.0

Terminal Outcomes:

- Manage tools and spare parts.
- Complete fiber installation and commissioning process

Duration: 20:00	Duration: 40:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
• Discuss the characteristics of Optical Fiber like refraction, polarization, attenuation, dispersion, etc. • Discuss the principles of optical transport media. • Discuss signal strength and quality KPIs of optical fiber cables. • Explain the uses of various installation equipment (Tubing Cutter, Rotary Cable Slitting & Ringing Tool, Fiber Optic Stripper, Buffer Tube Stripper, Crimp Tool, etc.) and test tools (Flashlight Continuity Tester (MM only) or Visual Fault Locator, Light source, Power meter, Power meter adapters, etc.). • Describe the handling and safety guidelines for installing Fiber Optic Cables. • Explain the significance of testing the cable on the drum for optical continuity. • Discuss commonly occurring hazards while handling the Optical Fiber Cables. • Explain the standard cable installation process (like trenching, cable laying, pitpreparation, splicing, jointing, blowing and back-filling, etc.) for installation of OFCs. • Describe fault analysis procedures and safety measures for different tools and mechanical equipment.	• Identify the tools and equipment required for optical fiber installation. • Demonstrate the operations of various tools and equipment required for optical fiber installation. • Apply appropriate practices to handle Optical fiber cables. • Demonstrate the method of trenching. • Demonstrate the procedure of cable pulling and cable blowing. • Demonstrate the methods of the cable preparation. • Employ appropriate techniques to determine the errors during installation and troubleshoot the same, • Perform the steps of receiving the fault notification, restoration, and repairing process. • Draft a sample Optical Time Domain Reflectometer (OTDR) report and summary of test to escalate any fault or issues to the Supervisor.
Classroom Aids:	
Participant handbook, Training Kit (Trainer Guide, Presentations), Whiteboard, marker pen, computer or laptop attached to LCD projector, scanner, computer speakers	
Tools, Equipment and Other Requirements	

Module 4: Perform Planned Maintenance and Repair Activities

Mapped to TEL/N6282 & v1.0

Terminal Outcomes:

- Perform the activities to maintain and repair the dark/spare optical fiber
- Create OFC, OTDR and assets registers

Duration: 20:00	Duration: 30:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
• Explain the concept and various elements of an as-build drawing. • Describe the importance of the Standard Operating Procedure for maintaining the equipment. • Explain the operating procedure of various test tools, such as Optical Time Domain Reflectometer (OTDR), power meter, light meter, etc. • Discuss various types of testing and repair procedures of the equipment. • Discuss commonly occurring errors while performing the physical maintenance activities. • Describe the procedure of reporting and documentation of the maintenance tasks.	• Demonstrate the procedure of sample check of as-build drawing. • Perform Optical Time Domain Reflectometer (OTDR) and Power meter tests for the dark/spare fibers. • Apply appropriate practices to test end to end link for adherence to link budget and identify loss and reflection points. • Demonstrate the planned maintenance activities for the Optical fiber Cables. • Perform the general maintenance of the tools and equipment, • Create a sample Optical Fiber Cable/ Optical Time Domain Reflectometer register as well as assets register for sites.
Classroom Aids:	
Participant handbook, Training Kit (Trainer Guide, Presentations), Whiteboard, marker pen, computer or laptop attached to LCD projector, scanner, computer speakers	
Tools, Equipment and Other Requirements	

Module 5: Perform Corrective Maintenance Activities

Mapped to TEL/N6282 & v1.0

Terminal Outcomes:

- Perform the steps of corrective maintenance procedure of Optical Fiber Cables.

Duration: 15:00	Duration: 30:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
- Discuss the importance of prompt handling of fault notification, - Explain the standard fault diagnosis and rectification procedure of the equipment, - Explain the procedure of various duct integrity tests, like air tightness and kink free tests. - Describe cable and route marking procedure, - Explain the importance of adhering to the standards and follow optimal values of OTDR, power meter, etc.	- Prepare the fault identification flow chart. - Demonstrate the procedure of identifying the fault location. - Employ appropriate practices to assess and verify the joint activities. - Perform various tests to verify the duct integrity. - Apply appropriate practices to coordinate with the laborers for the backfilling of the trench. - Demonstrate the procedure of rectifying the network problem. - Record all jointing test readings and analyze the test result to generate the acceptance report. - Perform the procedure to generate a sample jointing report using the results/findings in proper formats.
Classroom Aids:	
Participant handbook, Training Kit (Trainer Guide, Presentations), Whiteboard, Marker pen, Computer or Laptop attached to LCD projector, Scanner, Computer speakers	
Tools, Equipment and Other Requirements:	

Module 6: Introduction to the Role of a Broadband Technician

Mapped to NOS: TEL/N6283, v1.0

Terminal Outcomes:

- Describe the role and responsibilities to be performed by a broadband technician.
- Explain the scope of work for a broadband technician.

Duration: 15:00	Duration: 10:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
• Describe the size and scope of the Telecom industry and its various sub-sectors. • Explain the role and responsibilities of broadband technician. • 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 broadband technician in the process. • List the various daily, weekly, monthly operations/activities that take place at the site under a broadband technician.	• Evaluate case studies outlining the role, responsibilities, and challenges for a broadband technician. • Analyse the requirements for the course and prepare an action/learning plan for updating skills as per the pre-requisites of the course.
Classroom Aids	
Participant handbook, Training Kit (Trainer Guide, Presentations), Whiteboard, Markers, Notebooks, and Pens, Laptop/Computer with an Internet connection, Speakers, Projector or Large screen.	
Tools, Equipment and Other Requirements	

Module 7: Install Cable/System Wiring and Equipment at Customer Premises

Mapped to NOS: TEL/N6283, v1.0

Terminal Outcomes:

- Install cable/system wiring and equipment at customer premises

Duration: 15:00	Duration: 30:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
- Describe the various activities needed to be carried out prior to the installation procedure. - State the various cabling norms pertaining to laying of the cables. - Identify the cables, wire sizes and colors and connectors required as per customer requirements. - Explain the process of crimping, splicing and soldering of cables. - Analyse the work requirements received from the supervisor to plan visit to a site/customer premises for installation and carry required tools and equipment. - Discuss the importance of conducting post installation tests after laying down cables and installing modem, router and switch. - Explain the role of a UPS, its components and its installation and repair process. - State the importance of following defined procedures/work instructions issued as per SHE & OSH guidelines. - Explain the importance of maintaining and updating installation and testing records such as installation and test results, updated plans, installation documents and customer signoffs. - Discuss the importance of escalating and reporting incidents and/or emergencies.	- Demonstrate how to identify different types of cables, wires and connectors. - Perform splicing, crimping and soldering of cables. - Perform cable connectorization. - Prepare a list of probing questions to analyse the requirements of customers. - Inspect indoor and outdoor cable route using a variety of techniques. - Apply basic techniques to check that the equipment installation location is near power point and has proper signal coverage. - Demonstrate how to install cable wiring. Using the tools and equipment required for installation procedures. - Demonstrate the variety of techniques to test the cable and joints for transmission loss and strength. - Install equipment such as modem, router and/or switch and UPS. - Apply basic techniques to perform checks for voltage, current and earthing, and battery in case of a defective UPS. - Demonstrate how to repair a defective UPS. - Calculate sample equipment load and compare it with UPS rating. - Dispose the installation waste and restore work site to its original state, clean of debris and waste.
Classroom Aids	
Participant handbook, Training Kit (Trainer Guide, Presentations), Whiteboard, Markers, Notebooks, and Pens, Laptop/Computer with an Internet connection, Speakers, Projector or Large screen.	

Tools, Equipment and Other Requirements

Module 8: Configure Equipment and Establish Broadband Connectivity

Mapped to NOS: TEL/N6283, v1.0

Terminal Outcomes:

- Establish broadband connectivity of CPE with service provider gateway and end user device
- Record configuration setting and testing steps for customer.

Duration: 20:00	Duration: 25:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
- Summarize the concepts of network topologies, broadband network elements, gateways, TCP/IP, IP address, subnet masks, Ethernet address, MAC address, IPv4, IPv6 wires and their application in broadband connectivity. - Explain the process of configuring the customer premises equipment. - Recall basic commands at command line access and command prompt to be able to test and verify connectivity. - Describe the usage of basic commands like ping and ipconfig and acceptable round-trip time for IP packets process, and other such commands typically used for confirming connectivity. - Discuss the process of establishing broadband connectivity of CPE with service provider gateway and end user device and LAN/WiFi connectivity with CPE. - State the process to analyse test results of connectivity and throughput parameters to detect any issues/errors in connectivity. - Describe the process of performing speed test and recording the data throughputs to show to the customer about successful installation and connectivity among devices. - State the importance of explaining the basic troubleshooting steps to customers for quick resolution of common issues.	- Connect the laptop/PC, smart/IP TV and other customer device to the CPE and establish connectivity using appropriate (more than one) techniques/methods. - Execute the basic commands like ping and ipconfig. - Access CPE settings using default login credentials. And configure CPE as per the base setting (IP, gateway, mask etc.) - Demonstrate how to verify that all cables and connectors are plugged in properly. - Analyse test results for connectivity and throughput parameters using multiple approaches - Apply basic techniques to configure end user device to establish LAN / WiFi connectivity with CPE. - Demonstrate the tests and data records required after connecting a CPE including but not limited to: - Using common commands such as ping to configure end-user devices to the CPE - Perform speed test to verify against specifications - Record all test results and verify connectivity across end user devices
Classroom Aids	
Participant handbook, Training Kit (Trainer Guide, Presentations), Whiteboard, Markers, Notebooks, and Pens, Laptop/Computer with an Internet connection, Speakers, Projector or Large screen.	

Tools, Equipment and Other Requirements

Module 9: Troubleshoot and Rectify Broadband Network Faults

Mapped to NOS: TEL/N6284, v1.0

Terminal Outcomes:

- Troubleshoot and rectify cable, connectors and CPE faults
- Troubleshoot and repair clients' broadband service
- Complete documentation and clean-up work site

Duration: 30:00	Duration: 35:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
• Discuss transmission, broadcasting, switching and operation of telecommunication systems. • Explain electromagnetic interference (EMI) and its impact on? • Describe the functioning of circuit boards and processors. • Discuss the parameters used to identify cause of fault, No Service or service degradation. • Outline the process of testing cables using signal level meters/OTDR. • Explain how to repair and replace faulty connectors/damaged cable. • Describe the process of performing reconnectorisation/ crimping of cable pairs with connector. • Describe and detail the troubleshooting process for common CPE faults, signal loss and continuity and common network issues. • Explain how to monitor and repair system, drop, and in-house signal leakage and maintain records of all the troubleshooting activities undertaken for fault isolation and repairs/replacements. • Discuss how to interpret CPE data and other output of the device. • Discuss the process of restoring any changes made to the worksite during fault repair.	• Demonstrate the process to identify cause of fault or service degradation. • Employ appropriate techniques to test cables using signal level meters/OTDR. • Apply basic techniques to repair and replace faulty connectors/damaged cable • Perform the steps of re-connectorisation/ crimping of cable pairs with connector. • Demonstrate how to connect CPE to laptop/CPU/portable device, run diagnostics to find the issue, install the CPE access software, access the CPE through browser/software application and finally verify the functionality. • Apply basic techniques to re-configure/ reset the CPE to correct settings. • Apply appropriate techniques for troubleshooting typical problems between customer equipment and the optical node, common problems such as signal loss and interference, and network/connectivity problems using ping test, trace routes and speed test. • Record all test readings and document the results/findings in proper formats. • Demonstrate how to monitor, repair and record system, drop, and in-house signal leakage.
Classroom Aids	
Participant handbook, Training Kit (Trainer Guide, Presentations), Whiteboard, Markers, Notebooks, and Pens, Laptop/Computer with an Internet connection, Speakers, Projector or Large screen.	

Tools, Equipment and Other Requirements

Module 10: Maintain Workplace Safety, Resource Optimization, and hygiene standards

Mapped to NOS: TEL/N6285, v1.0

Terminal Outcomes:

- Explain how to plan work effectively, implement safety practices and Optimise use of resources.

Duration: 05:00	Duration: 10:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
- List the recent skills and technologies prevalent in the telecom industry. - Discuss the commonly occurring problems with their causes and solutions. - State the importance of keeping the workplace clean, safe and tidy. - List different types of hazards and the procedure to report it to the supervisor. - List the precautionary steps one needs to follow while handling hazardous materials. - State the importance of participating in fire drills and other safety workshops. - Discuss the significance of conforming to basic hygiene practices such as washing hands, using alcohol-based hand sanitizers. - List the different methods of cleaning, disinfection, sanitization, etc. - Discuss the importance of self-quarantine or self-isolation. - Explain the path of disease transmission. - Discuss organizational hygiene and sanitation guidelines and ways of reporting breaches/gaps, if any. - Explain the ways to optimize usage of resources. - Discuss various methods of waste management and disposal. - List the different categories of waste for the purpose of segregation. - Differentiate between recyclable and non-recyclable waste.	- Prepare a time schedule to complete the tasks on the given time. - Demonstrate the use of safety equipment such as goggles, gloves, ear plugs, shoes, etc. - Demonstrate the correct postures while working and handling hazardous materials at the workplace. - Demonstrate how to evacuate the workplace in case of an emergency. - Show how to sanitize and disinfect one's work area regularly. - Demonstrate the correct way of washing hands using soap and water. - Demonstrate the correct way of sanitizing hands using alcohol-based hand rubs. - Display the correct way of wearing and removing PPE such as face masks, hand gloves, face shields, PPE suits, etc. - Demonstrate warning labels, symbols and other related signages. - Perform basic checks to identify any spills and leaks and that need to be plugged /stopped. - Demonstrate different disposal techniques depending upon different types of waste. - Employ different ways to clean and check if equipment/machines are functioning as per requirements and report malfunctioning, if observed. - Demonstrate ways for efficient utilization of material and water.

- State the importance of using appropriate color dustbins for different types of waste.
- Discuss the common sources of pollution and ways to minimize it.

Classroom Aids

Participant handbook, Training Kit (Trainer Guide, Presentations), Whiteboard, Markers, Notebooks, and Pens, Laptop/Computer with an Internet connection, Speakers, Projector or Large screen.

Tools, Equipment and Other Requirements

Module 11: Operational Skills

Mapped to NOS: TEL/N6287, v1.0

Terminal Outcomes:

- Discuss how to communicate effectively and develop interpersonal skills.
- Explain the importance of developing sensitivity towards differently abled people.

Duration: 05:00	Duration: 10:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
• Discuss the importance of following the standard operating procedures of the company w.r.t priority, confidentiality and security. • Explain the standard procedure of communication and escalations of issues at the workplace. • Discuss the importance of timely rectification of issues. • State the importance of coordinating and resolving conflicts with the team members to achieve smooth workflow. • Discuss about the different types of disabilities with their respective issues. • List health and safety requirements for persons with disability. • Describe the rights, duties and benefits available at workplace for person with disability. • Explain the process of recruiting people with disability for a specific job. • Discuss the specific ways to help people with disability to overcome the challenges.	• Use different modes of communication as per requirement and need. • Prepare a sample report of the commonly occurring errors and their solutions. • Demonstrate the use of gender and PwD (Person with Disability) inclusive language. • Prepare a list of institutes and government schemes that help PwD in overcoming challenges. • Demonstrate the ideal behavior with a PwD in an organization
Classroom Aids	
Participant handbook, Training Kit (Trainer Guide, Presentations), Whiteboard, Markers, Notebooks, Pens, Laptop/Computer with an Internet connection, Speakers, Projector or Large screen.	
Tools, Equipment and Other Requirements	

Module 12: DGT/VSQ/N0101: Employability Skills (30 Hours)

Mandatory Duration: 30:00			
Location: On-Site			
S.No.	Module Name	Key Learning Outcomes	Duration (hours)
1.	Introduction to Employability Skills	- Discuss the Employability Skills required for jobs in various industries - List different learning and employability related GOI and private portals and their usage	1 Hour
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 - Show how to practice different environmentally sustainable practices.	1 Hour
3.	Becoming a Professional in the 21st Century	- Discuss importance of relevant 21st century skills. - Exhibit 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. - Describe the benefits of continuous learning.	1 Hour

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 interpret text written in basic English ● Write a short note/paragraph / letter/e -mail using basic English	2 Hours
5.	Career Development & Goal Setting	● Create a career development plan with well-defined short- and long-term goals	1 Hour
6.	Communication Skills	● Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette. ● Explain the importance of active listening for effective communication ● Discuss the significance of working collaboratively with others in a team	3 Hours
7.	Diversity & Inclusion	● Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD ● Discuss the significance of escalating sexual harassment issues as per POSH act.	1 Hour
12.	Financial and Legal Literacy	● Outline the importance of selecting the right financial institution, product, and service ● Demonstrate how to carry out offline and online financial transactions, safely and securely ● List the common components of salary and compute income, expenditure, taxes, investments etc. ● Discuss the legal rights, laws, and aids	4 Hours

13.	Essential Digital Skills	- Describe the role of digital technology in today's life - Demonstrate how to operate digital devices and use the associated applications and features, safely and securely - Discuss the significance of displaying responsible online behavior while browsing, using various social media platforms, e-mails, etc., safely and securely - Create sample word documents, excel sheets and presentations using basic features - Utilise virtual collaboration tools to work effectively	3 Hours
14.	Entrepreneurship	- 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 - Create a sample business plan, for the selected business opportunity	7 Hours
15.	Customer Service	- Describe the significance of analysing different types and needs of customers - Explain the significance of identifying customer needs and responding to them in a professional manner. - Discuss the significance of maintaining hygiene and dressing appropriately	4 Hours
16.	Getting Ready for	Create a professional Curriculum Vitae (CV)	2 Hours

	apprenticeship & Jobs	• Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively • Discuss the significance of maintaining hygiene and confidence during an interview • Perform a mock interview • List the steps for searching and registering for apprenticeship opportunities	
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LIST OF TOOLS & EQUIPMENT FOR EMPLOYABILITY SKILLS

Sl 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 13: On-the-Job Training

Mapped to QP: TEL/Qxxxx, v1.0

Mandatory Duration: 150:00	Recommended Duration: 00:00
Location: On-Site	
Terminal Outcomes 1. Inspect the proposed route to ensure that bend ratios meet manufacturer specifications and standards. 2. Create an installation workplan as per route. 3. Coordinate with the people for obtaining clearances. 4. Collect the tools and equipment needed for optical fiber installation. 5. Ensure that all tools and equipment are functioning properly. 6. Perform trenching for the installation. 7. Perform cable pulling and cable blowing as per SOP. 8. Prepare the cable for installation. 9. Check for errors during installation and troubleshoot them. 10. Ensure that proper fault notification is received, restored, and fault is repaired. 11. Create a Optical Time Domain Reflectometer (OTDR) report to share with the supervisor. 12. Conduct OTDR and Power meter tests for the dark/spare fibers. 13. Test end- to-end link for adherence to budget and identify loss and reflection points. 14. Perform periodic and corrective maintenance of Optical fiber Cables. 15. Prepare a Optical Fiber Cable/ Optical Time Domain Reflectometer record to note down the details and assets for sites. 16. Perform fault location using appropriate techniques Adopt energy-efficient practices, such as switching off unused devices and tools, and handling all equipment as per prescribed guidelines. 17. Conduct different tests to verify the duct integrity. 18. Coordinate with the other teams for backfilling of the trench. 19. Rectify network problems, if observed. 20. Record test readings and analyse the test results to create the acceptance report. 21. Create a jointing report using the results/findings in prescribed formats. 22. Distinguish between cables and wires based on their characteristics, features and usage. 23. Demonstrate how to install different types of cables, wires and connectors. 24. Perform splicing, crimping, soldering of cables, and connectorisation. 25. Check indoor and outdoor cable routes. 26. Inspect the site thoroughly for the viability of cable installation and other tasks.	

27. Demonstrate how to install cable wiring.
28. Test the cable and joints for transmission loss and strength.
29. Install other equipment and calculate load.
30. Check connectivity with laptop/PC, smart/IP TV etc.
31. Demonstrate how to conduct various tests after connecting a CPE using common commands such as ping.
32. Perform functional testing of the installed system.
33. Conduct various tests such as speed test, ping test, trace routes, etc.
34. Troubleshoot faults or other service-related issues.
35. Demonstrate how to re-connect/crimp cable pairs with connector.
36. Perform appropriate steps to connect CPE to laptop/CPU/portable device.
37. Check the functioning of the system on all devices and rectify issues, if any.
38. Ensure to record test readings and observations as per prescribed format.
39. Monitor the system to check drop connectivity or in-house signal leakage, if any.
40. Troubleshoot and repair the system and again check for signal strength and functioning.
41. Report all tasks and their status to supervisor.

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Graduate	Electronics and Communication /Telecom/ Information Technology/ Computer Science and other relevant fields.	2	Optical Fiber/ Broadband	2	Optical Fiber/ Broadband	Eligible for ToT

Trainer Certification	
Domain Certification	Platform Certification
Certified for Job Role: “Broadband Network Technician” mapped to QP: “TEL/Q4110, v1.0”. Minimum accepted score is 80%.	Certified for the Job Role: “Trainer (VET and Skills)”, mapped to the Qualification Pack: “MEP/Q2601, v3.0”. The minimum accepted score as per MEPSC guidelines is 80%.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Graduate	Electronics and Communication /Telecom/ Information Technology/ Computer Science and other relevant fields.	2	Optical Fiber/ Broadband	2	Optical Fiber/ Broadband	Eligible for ToA

Assessor Certification	
Domain Certification	Platform Certification
Certified for Job Role: “Broadband Network Technician” mapped to QP: “TEL/Q4110, v1.0”. Minimum accepted score is 80%.	Certified for the Job Role: “Assessor (VET and Skills)”, mapped to the Qualification Pack: “MEP/Q2701, v3.0”, with a minimum score of 80%.

References

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.

Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.

Acronyms and Abbreviations

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
PC	Performance Criteria
SSC	Sector Skill Council
AA	Assessment Agency
ToT	Training of Trainers
ToA	Training of Assessors
VTP	Vocational Training Partner
TC	Training Center
SME	Subject Matter Expert