



Model Curriculum

QP Name: Outside Plant Fiber Installation, Testing and Commissioning Supervisor

QP Code: TEL/Q4107

QP Version: 3.0

NSQF Level: 4

Model Curriculum Version: 2.0

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Training Parameters

| | |
|--|--|
| Sector | Telecom |
| Sub-Sector | Passive Infrastructure |
| Occupation | Operations and Maintenance – Passive Infrastructure |
| Country | India |
| NSQF Level | 4 |
| Aligned to NCO/ISCO/ISIC Code | NCO-2015/7422.0804 |
| Minimum Educational Qualification & Experience | <p>12th grade pass OR Completed 2nd year of 3-year diploma (after 10th) OR Pursuing 2nd year of 3-year regular Diploma (after 10th) OR 10th grade pass with two years of any combination of NTC/NAC/CITS or equivalent OR 8th pass plus 2-year NTC plus 1-Year NAC plus 1-Year CITS OR 10th grade pass and pursuing continuous schooling With No Experience required OR Previous relevant Qualification of NSQF Level 3.0 with 3-year relevant experience</p> |
| Pre-Requisite License or Training | NA |
| Minimum Job Entry Age | 17 Years |
| Last Reviewed On | 24/02/2022 |
| Next Review Date | 24/02/2025 |
| NSQC Approval Date | 24/02/2022 |
| Version | 3.0 |
| Model Curriculum Creation Date | 24/02/2022 |
| Model Curriculum Valid Up to Date | 24/02/2025 |
| Model Curriculum Version | 2.0 |
| Minimum Duration of the Course | 570 Hours, 0 Minutes |

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|--------------------------------|----------------------|
| Maximum Duration of the Course | 570 Hours, 0 Minutes |
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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.

- Handle cable constructs, performance and selection criteria of fiber cables.
- Check fiber connectorisation and splicing.
- Follow procedures for outside plant cable installation.
- Prepare cables for termination and splicing.
- Test and troubleshoot outside plant fiber.
- Practice safety precautions with fiber optics.
- Organize work and resources as per health and safety standards.
- Communicate, develop interpersonal skills and develop sensitization towards gender and person with disability.

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 |
|---|-----------------|--------------------|--|--|----------------|
| Bridge Module | 20:00 | 10:00 | 00:00 | - | 30:00 |
| Module 1: Introduction to the role and responsibilities of Outside Plant Fiber Installation, Testing and Commissioning Supervisor | 20:00 | 10:00 | 00:00 | - | 30:00 |
| TEL/N4126– Handling Fiber constructs, performance and selection criteria NOS Version No. 2.0 NSQF Level 4 | 20:00 | 20:00 | 20:00 | - | 60:00 |
| Module 2: Handling Fiber constructs, performance and selection criteria | 20:00 | 20:00 | 20:00 | - | 60:00 |
| TEL/N4127– Fiber connectorisation, splicing and first level checks NOS Version No. 2.0 NSQF Level 4 | 20:00 | 20:00 | 20:00 | - | 60:00 |
| Module 3: Fiber connectorisation, splicing and first level checks | 20:00 | 20:00 | 20:00 | - | 60:00 |

| | | | | | |
|--|---------------|---------------|---------------|--------------|---------------|
| TEL/N4128 – Outside plant cable installation procedures and practices NOS Version No. 2.0 NSQF Level 4 | 20:00 | 20:00 | 20:00 | - | 60:00 |
| Module 4: Outside plant cable installation procedures and practices | 20:00 | 20:00 | 20:00 | - | 60:00 |
| TEL/N4129 - Preparing cable for termination and splicing NOS Version No. 2.0 NSQF Level 4 | 20:00 | 20:00 | 20:00 | - | 60:00 |
| Module 5: Preparing cable for termination and splicing | 20:00 | 20:00 | 20:00 | - | 60:00 |
| TEL/N4130 - Outside plant fiber testing and troubleshooting NOS Version No. 2.0 NSQF Level 4 | 30:00 | 40:00 | 20:00 | - | 90:00 |
| Module 6: Outside plant fiber testing and troubleshooting | 30:00 | 40:00 | 20:00 | - | 90:00 |
| TEL/N4131 - Work Safety with fiber optics NOS Version No. 2.0 NSQF Level 4 | 30:00 | 40:00 | 20:00 | - | 90:00 |
| Module 7: Work Safety with fiber optics | 30:00 | 40:00 | 20:00 | - | 90:00 |
| TEL/N9101 – Organize work and resources as per health and safety standards NOS Version No. 1.0 NSQF Level 4 | 10:00 | 20:00 | 00:00 | - | 30:00 |
| Module 8: Plan Work Effectively, Optimise Resources and Implement Safety Practices | 10:00 | 20:00 | 00:00 | - | 30:00 |
| TEL/N9102 – Interact Effectively with Team Members and Customers NOS Version No. 1.0 NSQF Level 4 | 10:00 | 20:00 | 00:00 | - | 30:00 |
| Module 9: Communication and interpersonal skills | 10:00 | 20:00 | 00:00 | - | 30:00 |
| DGT/VSQ/N0102 Employability Skills (60 Hours) | 60:00 | 00:00 | 00:00 | 00:00 | 60:00 |
| Total Duration | 240:00 | 210:00 | 120:00 | 00:00 | 570:00 |

Module Details

Module 1: Introduction to the role of Outside Plant Fiber Installation, Testing and Commissioning Supervisor Mapped to Bridge Module

Terminal Outcomes:

- Demonstrate the role and responsibilities of Out Side Plant (OSP) Supervisor.
- Understand the fundamentals and working principle of Optical Fiber.

| | |
|---|---|
| Duration: 20:00 | Duration: 10:00 |
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Recall the fundamentals of optical fiber and their applications. • Summarize the history of optical fiber. • Solve the challenges faced during handling of fiber optics. • Illustrate on working principles of optical fiber communication system. | <ul style="list-style-type: none"> • Compare optical fiber performance parameters like attenuation, bending, dispersion, cut-off wavelength and mode-field diameter. • Explain the various fiber geometric parameters (core, clad and buffer). • Infer the importance of cable jackets, strength members and moisture/waterblocking compounds. |
| Classroom Aids: | |
| Laptop, white board, marker, projector | |
| Tools, Equipment and Other Requirements | |
| Documents of standard operating procedures, code of conduct, checklists, installation and troubleshooting tools/equipment’s, status report | |

Module 2: Handling Fiber constructs, performance and selection criteria Mapped to TEL/N4126, v2.0

Terminal Outcomes:

- Understand Optical Fiber construction & transmission basics
- Understand fiber performance parameters
- Distinguish different types of fibers and identifiers

| Duration: 20:00 | Duration: 20:00 |
|--|---|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Explain basics of optical fiber cable constructions • Explain basics of optical fiber cable constructions • Classify the optical fiber cable types – ribbon fiber cables, underground/ buried cables, aerial cables, underwater and submarine cables • Relate cable identifiers and primary requirements • List the fiber standard colour codes • Outline single mode optical fiber cable specifications and ITU-T standardisations | <ul style="list-style-type: none"> • Identify the optical fiber cable selection criteria like pulling strength, rodent penetration, grounding and bonding • Identify primary fiber cable differentiators – simplex and zip cords, distribution cable and breakout cables • Demonstrate optical fiber as communication medium • Illustrate basics of optical fiber manufacturing and construction • Demonstrate the optical fiber light transmission basics • Demonstrate the working principles of multi-mode and single mode fibers • Optical fiber performance parameters and selection criteria |
| Classroom Aids: | |
| Laptop, white board, marker, projector | |
| Tools, Equipment and Other Requirements | |
| Different types of optical fiber cables – Multi-tube single jacket duct fiber cable, multi-tube double jacket dielectric armoured fiber, uni-tube single jacket ribbon fiber cable, multitube single jacket armoured figure-8 cable, multitube double jacket ADSS fiber cable. | |
| Personal Protection Equipment: safety glasses, head protection, warning signs and tapes | |

Module 3: Fiber connectorisation, splicing and first level checks

Mapped to TEL/N4127, v2.0

Terminal Outcomes:

- Understanding connector types and its use
- Perform mechanical splicing, fusion splicing and ribbon splicing
- Perform first level/immediate performance checks

| Duration: 20:00 | Duration: 20:00 |
|--|---|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Ascertain availability of all parts/components, tools and equipment’s of telecom devices/ products • Examine the causes of attenuation on connectors • Solve the challenges faced by single mode connectorisation • Distinguish the different types of alignment mechanisms in mechanical splices | <ul style="list-style-type: none"> • Identify fiber connectors, their construction, connector ferrule shapes and polishes • Identify the connector colour codes (TIA568) • Compare the different types of connectors – SC, ST, FC/PC, MT • Analyse the effect of polish type on connectors (Flat, PC, UPC, APC) • Elaborate the procedure for termination of connectors • Interpret criterion for fiber connector performance • Estimate the importance of connector inspection and cleaning • Illustrate the processes of mechanical splicing • Illustrate the processes of fusion splicing • Illustrate the processes of ribbon splicing • Evaluate the quality of splices – good splices or bad splices • Test and troubleshoot issues related to splicing – not fused through, match heads, constriction, enlargement, bubble or inclusion • Perform standard cleaning practices before beginning and during start of the splicing process • Inspect the periodical checking and cleaning practices • Compile the checklist of splicing process • Compile performance measurement techniques and corrective actions |
| Classroom Aids: | |
| Laptop, white board, marker, projector | |

Tools, Equipment and Other Requirements

Cable blowing machines, Protection Sleeves, Fiber Stripper, OTDR, Different types of fiber cables (aerial, buried and underground), drum flanges

Personal Protection Equipment: safety glasses, head protection, warning signs and tapes

Module 4: Outside plant cable installation procedures and practices

Mapped to TEL/N4128, v2.0

Terminal Outcomes:

- Build proper relationship with colleagues
- Prepare different log sheet

| Duration: 20:00 | Duration: 20:00 |
|---|---|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Classify various types of optical fiber cable constructs. • Suitability of deployment of optical fiber cables given a specific requirement • Importance of safe/correct handling and negative effects on exceeding parameters like bend radius etc • Need for proper trenching, ducting, aerial messages/supports and best practices | <ul style="list-style-type: none"> • Mark the pre-construction survey on the site • Handle key equipment and their characteristics (blowing equipment, cable pulling tools etc) • Select appropriate cables for installation procedures – direct buried installation (single jacket, dual jacketed cable), underground (duct) installation (“figure 8” demonstration), aerial installation (bending radius, placing tension) • Illustrate cable hauling process and pre-installation check with the following constraint check – maximum pulling tension, maximum bending radius, total cable length, splicing length requirement at end points • Carry out duct rodding, testing and cleaning processes • Perform pre-testing with an OTDR |
| Classroom Aids: | |
| White board/ black board marker / chalk, duster, computer or Laptop attached to LCD projector | |
| Tools, Equipment and Other Requirements | |
| Cable blowing machines, Protection Sleeves, Fiber Stripper, OTDR, Different types of fiber cables (aerial, buried and underground), drum flanges. Personal Protection Equipment: safety glasses, head protection, rubber gloves, safety footwear, warning signs and tapes, fire extinguisher and first aid kit. | |

Module 5: Preparing cable for termination and splicing

Mapped to TEL/N4129, v2.0

Terminal Outcomes:

- Preparation of fiber optic cable
- Handle fiber optic cable for pulling
- Demonstrate cable slack management

| Duration: 20:00 | Duration: 20:00 |
|--|---|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Demonstrate the effect of cable parameters on performance • Understand the relevance of proper slack management • Demonstrate cable handling practices (drum handling, fork-lifts loading/unloading of drums) • Understand effects of cable laying practices on performance | <ul style="list-style-type: none"> • Pull the cable (by removing strength members in the cables) • Construct armoured cable using ripcord • Construct dual jacket plant cable using a Kellum’s grip • Pull optic cable by placing the cable drum in upright position • Lift cable drums with a shaft without damage • Handle fork-lift to keep the drums in upright position • Roll the drums as per the direction marked on the drum flanges • Measure the cable slack management based on cable bend radius |
| Classroom Aids: | |
| White board/ black board marker / chalk, duster, computer or Laptop attached to LCD projector | |
| Tools, Equipment and Other Requirements | |
| Different types of fiber cables, needle nose pliers, scissors, slack brackets, shaft. Personal Protection Equipment: safety glasses, head protection, rubber gloves, safety footwear, warning signs and tapes, fire extinguisher and first aid kit | |

Module 6: Outside plant fiber testing and troubleshooting

Mapped to TEL/N4130, v2.0

Terminal Outcomes:

- fiber test parameters
- test equipment (OTDR, Optic Power Meter, OLTS kit, VFL, fiber tracer)
- Report & Record

| Duration: 30:00 | Duration: 40:00 |
|--|---|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Explain the optical power and power loss, visual cable fault locator, OLTS, visual inspection test (use of fiber tracer) • Understand measurement units (db & dbm) and decibel to power conversions • Explain optical fiber power meters and test sources • Understand the effects of cable laying practices on performance • Explain loss measurement references and measuring techniques | <ul style="list-style-type: none"> • Compare the optical power measurement parameters (optical power, attenuation levels at fiber, connectors) fault location • Calibrate the test equipment like OTDR, optical power meter, visual cable fault locator, OLTS, visual inspection test (using fiber tracer) • Measure power levels for loss testing using Fiber optic power meters • Measure optical loss or attenuation in fibers, cables or connectors from optical fiber test source • Perform visual inspection test of connectors using microscope • Measure the loss of fiber, connectors and connectorized cables using Optical loss test sets (OLTS) • Visualise the phenomenon of backscattering and find faults and optimize splices using Optical Time Domain Reflectometer (OTDR) • Check cable continuity using visual cable tracers and fault locators • Illustrate “one-cable”, “two cables” and “three cables” tests for loss measurement • Identify the types of faults or failures in fiber cable • Perform testing the installed fiber optic cable plant – continuity testing, insertion loss test • Compare different types of OSP Network Testing – Chromatic dispersion cause, material dispersion, waveguide dispersion, chromatic dispersion |
| Classroom Aids: | |
| White board/ black board marker / chalk, duster, computer or Laptop attached to LCD projector | |

Tools, Equipment and Other Requirements

Optical power meter, Fiber optic test source, OLTS, OTDR, Visual Cable tracer, attenuators
Personal Protection Equipment: safety glasses, head protection, rubber gloves, safety footwear, warning signs and tapes, fire extinguisher and first aid kit

Module 7: Work Safety with fiber optics

Mapped to TEL/N4131, v2.0

Terminal Outcomes:

- Follow safety procedures while working with fiber optics

| Duration: 30:00 | Duration: 40:00 |
|--|---|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Understand legislative requirements and organizations procedures for health, safety and security and role and responsibilities • Explain hazard, including the different types of health and safety hazards that can be found in the workplace • Understand the process of preparation of report hazards • Explain limits of responsibility for dealing with hazards • Explain the importance of maintaining high standards of health, safety and security • Describe the implications that any non-compliance with health, safety and security may have on individuals and the organization • Describe construct of fiber and the damage the fiber constituent material can cause • Classify the safety features of protective equipment and gears | <ul style="list-style-type: none"> • Perform fiber work safety in fiber optic installations • Wear eye-safety to protect cornea or lens during work • Handle safely bare fiber from broken ends of fibers and scraps of fibers during termination and splicing • Compare the manufacturer supplied material safety data sheet (MSDS) with on-ground materials • Follow fire safety practices while using electric arc to make fusion splicers • Comply and adhere electrical safety norms while working with fiber hardware connectivity • Summarize the laser safety norms and applicable classes • Record the health and safety instances |
| Classroom Aids: | |
| White board/ black board marker / chalk, duster, computer or Laptop attached to LCD projector | |
| Tools, Equipment and Other Requirements | |
| Safety glasses, safety hand-gloves, microscope with infrared filters, isopropyl alcohol, adhesives, class III optical amplifiers. | |
| Personal Protection Equipment: safety glasses, head protection, rubber gloves, safety footwear, warning signs and tapes, fire extinguisher and first aid kit. | |

Module 8: Plan Work Effectively, Optimise Resources and Implement Safety Practices Mapped to TEL/N9101, v1.0

Terminal Outcomes:

- Plan work effectively, implement safety practices and optimise use of resources

| Duration: 10:00 | Duration: 20:00 |
|--|---|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> Discuss the importance of following the standard operating procedures of the company w.r.t. privacy, confidentiality and security Explain how to develop skills and expertise in the job role List the key performance indicators for the new tasks Discuss correct way to show emotions at workplace Identify the issues with and handle them Describe the importance of timely completion of tasks Explain the importance of escalation matrix Explain the importance of providing and receiving feedback constructively Identify different types of hazards such as illnesses, accidents, fires, etc. List the causes of risks and potential hazards in a work area and the ways to prevent them List the steps to report accident and health related issues as per SOP Explain the importance of maintaining proper posture at work, especially when handling heavy and hazardous materials Analyse ways to optimise usage of resources Discuss how to optimise the use of electrical equipment and appliances to ensure that they conform to safety and resource conservation norms List the importance, cause and effect of greening of jobs Explain the concept of waste management List the methods of waste disposal Identify the different categories of waste for the purpose of segregation | <ul style="list-style-type: none"> Demonstrate techniques to save on cost and time Demonstrate routine cleaning of tools, equipment and machines to ensure team follows the same practices Use resources such as water judiciously Perform basic steps to 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. Perform basic steps to check for spills and leaks and plug the same Demonstrate segregation of different 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 |

| | |
|--|--|
| <ul style="list-style-type: none"> • Differentiate between recyclable and non-recyclable waste • List electronic waste disposal procedures • List the common sources of pollution and the ways to minimize it | |
| 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 9: Communication and Interpersonal Skills

Mapped to TEL/N9102, v1.0

Terminal Outcomes:

- Develop communication skills, interpersonal skills and sensitization towards gender and persons with disability

| Duration: 10:00 | Duration: 20:00 |
|--|--|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • List the roles and responsibilities and understand organisation’s policies • Discuss the organisational guidelines for dress code, time schedules, language and other soft skill aspects • Discuss the importance of reporting unforeseen disruptions or delays • Explain how to give and receive feedback in a constructive way • List the different methods of communication • Explain the importance of effective communication and interpersonal skills • Discuss how to listen attentively and respond appropriately • Describe the common reasons for interpersonal conflicts and ways of managing them effectively • List the different types of information needed by colleagues and their importance • Discuss the importance of implementing standards, guidelines and practices pertaining to gender sensitivity, including work ethics and workplace etiquette • Discuss about the different types of disabilities along with their respective issues • Explain work ethics, workplace etiquette as well as standards and guidelines for all genders and PwD • List health and safety requirements for persons with disability • Describe the rights, duties and benefits available at workplace for persons with disability • Explain the process of recruiting people with disability for a specific job | <ul style="list-style-type: none"> • 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 maximising effectiveness and efficiency of carrying out tasks • Demonstrate appropriate communication skills and etiquette 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 |

- Discuss the specific ways to help persons with disability overcome the challenges

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.

Module 10: On-the-Job Training

Mapped to Outside Plant Fiber Installation, Testing and Commissioning Supervisor

| | |
|---|------------------------------------|
| Mandatory Duration: 120:00 | Recommended Duration: 00:00 |
| Location: On-Site | |
| Terminal Outcomes | |
| <ol style="list-style-type: none"> 1. Explain optical fiber as communication medium 2. Basics of optical fiber manufacturing and construction KB3. optical fiber light transmission basics 3. multi-mode and single mode fibers 4. optical fiber performance parameters and selection criteria 5. optical fiber specifications 6. types of cable connectors 7. losses and attenuations (dB/dBm) 8. optical loss limiting techniques and processes 9. functioning of stripping, cleaving and splicers 10. performance measurement techniques and corrective actions 11. various types of optical fiber cable constructs 12. suitability of deployment of optical fiber cables given a specific requirement 13. importance of safe/correct handling and negative effects on exceeding parameters like bend radius etc 14. handling of key equipment and their characteristics (blowing equipment, cable pulling tools etc) 15. effect of cable parameters on performance 16. relevance of proper slack management 17. cable handling practices (drum handling, fork-lifts loading/unloading of drums) 18. optical power and power loss, visual cable fault locator, OLTS, visual inspection test (use of fiber tracer) 19. measurement units (db & dbm) and decibel to power conversions 20. optical fiber power meters and test sources 21. effect of cable laying practices on performance | |

Module 11: DGT/VSQ/N0102 Employability Skill (60 hours)

Mapped to Outside Plant Fiber Installation, Testing and Commissioning Supervisor

Mandatory Duration: 60:00

Location: On-Site

| S.No. | Module Name | Key Learning Outcomes | Duration (hours) |
|-------|---|---|------------------|
| 1. | Introduction to Employability Skills | <ul style="list-style-type: none"> Discuss the Employability Skills required for jobs in various industries. List different learning and employability related GOI and private portals and their usage. | 1.5 |
| 2. | Constitutional values - Citizenship | <ul style="list-style-type: none"> 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. | 1.5 |
| 3. | Becoming a Professional in the 21st Century | <ul style="list-style-type: none"> 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. | 2.5 |
| 4. | Basic English Skills | <ul style="list-style-type: none"> Show how to use basic English sentences for every day 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. | 10 |
| 5. | Career Development & Goal Setting | <ul style="list-style-type: none"> Create a career development plan with well-defined short- and long-term goals. | 2 |
| 6. | Communication Skills | <ul style="list-style-type: none"> 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. | 5 |
| 7. | Diversity & Inclusion | <ul style="list-style-type: none"> 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. | 2.5 |
| 8. | Financial and Legal Literacy | <ul style="list-style-type: none"> 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. | 5 |

| | | | |
|-----|---|---|----|
| | | <ul style="list-style-type: none"> Discuss the legal rights, laws, and aids. | |
| 9. | Essential Digital Skills | <ul style="list-style-type: none"> 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. Utilize virtual collaboration tools to work effectively. | 10 |
| 10. | Entrepreneurship | <ul style="list-style-type: none"> 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 |
| 11 | Customer Service | <ul style="list-style-type: none"> Describe the significance of analyzing 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. | 5 |
| 12 | Getting Ready for Apprenticeship & Jobs | <ul style="list-style-type: none"> Create a professional Curriculum Vitae (CV). 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. | 8 |

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.

Annexure

Trainer Requirements (Outside Plant Fiber Installation, Testing and Commissioning Supervisor)

| Trainer Prerequisites | | | | | | |
|--------------------------------------|--|------------------------------|----------------------|---------------------|----------------|--------------------------|
| Minimum Educational Qualification | Specialization | Relevant Industry Experience | | Training Experience | | Remarks |
| | | Years | Specialization | Years | Specialization | |
| Diploma after Class 10 th | Electronics/Telecom/IT and other relevant fields | 4 | Optical Fiber domain | 0 | NA | Eligible for ToT Program |
| Graduate | Science/Electronics/Telecom/IT and other relevant fields | 1 | Optical Fiber domain | 0 | NA | Eligible for ToT Program |

| Trainer Certification | |
|---|---|
| Domain Certification | Platform Certification |
| Certified in Job Role: Outside Plant Fiber Installation, Testing and Commissioning Supervisor, TEL/Q4107 v3.0 , Minimum accepted score is 80% | Certified in Job Role: “Trainer (VET and Skills)” , “MEP/Q2601 v2.0” , Minimum accepted score is 80% |

Assessor Requirements (*Outside Plant Fiber Installation, Testing and Commissioning Supervisor*)

| Assessor Prerequisites | | | | | | |
|--|--|------------------------------|----------------------|---------------------|----------------|--------------------------|
| Minimum Educational Qualification | Specialization | Relevant Industry Experience | | Training Experience | | Remarks |
| | | Years | Specialization | Years | Specialization | |
| Diploma after Class 10th | Electronics/Telecom/IT and other relevant fields | 4 | Optical Fiber domain | 0 | NA | Eligible for ToA Program |
| Graduate | Science/Electronics/Telecom/IT and other relevant fields | 1 | Optical Fiber domain | 0 | NA | Eligible for ToA Program |

| Assessor Certification | |
|--|--|
| Domain Certification | Platform Certification |
| Certified in Job Role: Outside Plant Fiber Installation, Testing and Commissioning Supervisor, TEL/Q4107, v3.0 , Minimum accepted score is 80% | Certified in Job Role: “Assessor (VET and Skills)” , “MEP/Q2701 v2.0” , Minimum accepted score is 80% |

Trainer Requirements (Employability Skills 60 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: |
| Current ITI trainers | Employability Skills Training (3 days full-time course done between 2019-2022) | | | | | <ul style="list-style-type: none"> • have good communication skills • be well versed in English • have digital skills • have attention to detail • be adaptable • have willingness to learn |
| Certified current EEE trainers (155 hours) | from Management SSC (MEPSC) | | | | | |
| Certified Trainer | Qualification Pack: Trainer (MEP/Q0102) | | | | | |

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

Master Trainer Requirements (Employability Skills 60 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 Master trainer should: <ul style="list-style-type: none"> • have good communication skills • be well versed in English • have basic digital skills |
| Certified Master Trainer | Qualification Pack: Master Trainer (MEP/Q2602) | | | 3 | EEE training of Management SSC (MEPSC) (155 hours) | <ul style="list-style-type: none"> • 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 60-hour Employability NOS (2022), with a minimum score of 90% . OR Certified in 120-, 90-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
 - 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
 - Assessor must be ToA certified & 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 & 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:
 - Surprise visit 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 & 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 60 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 |
|------------------------------|---|
| Sector | Sector is a conglomeration of different business operations having similar businesses 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 organization. |
| 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 they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts. |
| 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 |
| OSP | Outside Plant |
| OTDR | Optical Time Domain Reflectometer |
| OLTS | Optical Loss Test Set |
| VLF | Visual Fault Locator |
| SHE | Safety, Health and Environment |
| OHS | Occupational Health and Safety |
| ES | Employability Skills |