



Model Curriculum

QP Name: Fiber to-the Home (FTTH/X) Installer

QP Code: TEL/Q4200

QP Version: 3.0

NSQF Level: 3

Model Curriculum Version: 1.0

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Training Parameters

Sector	Telecom
Sub-Sector	Passive Infrastructure
Occupation	Network (Passive) Installation
Country	India
NSQF Level	3
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7422.0803
Minimum Educational Qualification & Experience	Grade 10 pass OR Grade 8 pass with two years of (NTC/ NAC) after 8th OR Grade 8 pass and pursuing continuous schooling in regular school with No Experience required OR 9th Grade pass with 1-year relevant experience OR Previous relevant Qualification of NSQF Level 2 with 3-year relevant experience
Pre-Requisite License or Training	NA
Minimum Job Entry Age	15 Years
Last Reviewed On	24/02/2022
Next Review Date	24/02/2025
NSQC Approval Date	24/02/2022
QP Version	3.0
Model Curriculum Creation Date	24/02/2022
Model Curriculum Valid Up to Date	24/02/2025
Model Curriculum Version	1.0
Minimum Duration of the Course	450 Hours, 0 Minutes
Maximum Duration of the Course	450 Hours, 0 Minutes

Program Overview

This section summarizes the end objectives of the program along with its duration.

Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills.

- Follow procedures for outside plant cable installation.
- Prepare cables for splicing.
- Install passive FTTH/X components.
- Construct FTTH/X cabling inside the building.
- Follow safety precautions pertaining to optical fiber.
- 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 Fiber to-theHome (FTTH/X) Installer	20:00	10:00	00:00	-	30:00
TEL/N4128 – Outside plant (OSP) cable installation procedures and practices NOS Version No. 2.0 NSQF Level 3	20:00	40:00	30:00	-	90:00
Module 2: Outside plant cable installation procedure and practices	20:00	40:00	30:00	-	90:00
TEL/N6400– Undertake splicing of Optical Fiber NOS Version No. 2.0 NSQF Level 3	10:00	20:00	30:00	-	60:00
Module 3: Undertake splicing of Optical Fiber	10:00	20:00	30:00	-	60:00

TEL/N4200 – Installation of passive FTTH/X components NOS Version No. 2.0 NSQF Level 3	10:00	30:00	20:00	-	60:00
Module 4: Installation of passive FTTH/X components	10:00	30:00	20:00	-	60:00
TEL/N4201 - In-building FTTH/X Cabling NOS Version No. 2.0 NSQF Level 3	20:00	20:00	20:00	-	60:00
Module 5: In-building FTTH/X Cabling	20:00	20:00	20:00	-	60:00
TEL/N4131 - Work Safety with fiber optics NOS Version No. 2.0 NSQF Level 3	20:00	20:00	20:00	-	60:00
Module 6: Work Safety with fiber optics	20:00	20:00	20:00	-	60:00
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 7: 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 8: Communication and interpersonal skills	10:00	20:00	00:00	-	30:00
DGT/VSQ/N0101 Employability Skills (30 Hours)	30:00	00:00	00:00	-	30:00
Total Duration	150:00	180:00	120:00	-	450:00

Module Details

Module 1: Introduction to the role of Fiber to-the Home (FTTH/X) Installer

Mapped to Bridge Module

Terminal Outcomes:

- Demonstrate the role and responsibilities of FTTH/X Installer

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 principle of optical fiber communication system • 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/ water blocking 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, status reports	

Module 2: Outside plant cable installation procedure and practices

Mapped to TEL/N4128, v2.0

Terminal Outcomes:

- Pre-installation checks and processes
- Direct buried installation
- Underground (duct) installation
- Aerial installation

Duration: 20:00	Duration: 40:00
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:	
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 3: Undertake splicing of Optical Fiber

Mapped to TEL/N6400 v2.0

Terminal Outcomes:

- Prepare cable for splicing operations
- Ensure availability of tools and spares
- Perform splicing operations
- Testing effectiveness and perform joint closure
- Report and record

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the principles of optical transport media and OFC communication • Understanding for the knowledge of Optical fiber characteristics like refraction, polarization, attenuation, dispersion • Explain the bands in optical fiber and their usability, loss characteristics • Explain the functionality of optical equipment like cleaver, mechanical and fusion splicing kit, protection sleeves, fiber stripper, fiber reinforced plaster during splicing and jointing • Explain the functionality of optical test equipment like OTDR and power meter • Understand the optimal values of OTDR, Power meter and light meter test results • Explain the utility of as made route diagrams • Understand standard process and need for performing duct integrity tests like air tightness 	<ul style="list-style-type: none"> • Identify various tools and equipment used during the splicing process – OTDR, Power Meter etc. • Test the connector end and follow the cleaning procedures • Carry out splicing – mechanical or fusion splicing as required on-ground • Test optical fiber cable for continuity, insertion loss and troubleshooting • Test the optical fiber cables using optical inspection microscope, OTDR, Visual Fault Locator (VFL) • Demonstrate the process of standard trenching, cable laying, pit preparation, splicing, jointing, blowing and back-filling process for installation of OFC cables • Illustrate the preparation of different types of OFC connectors based on the type of equipment • Measure signal strength and quality KPIs – design values and margins
Classroom Aids:	
Laptop, white board, marker, projector	
Tools, Equipment and Other Requirements	
Cleaver, Mechanical and fusion Splicing kit, Protection Sleeves, Fiber Stripper, Fiber reinforced plaster and Jointing, Optical test equipment - OTDR and power meter	
Personal Protection Equipment: safety glasses, head protection, warning signs and tapes	

Module 4: Installation of passive FTTH/X components

Mapped to TEL/N4200 v2.0

Terminal Outcomes:

- installation of passive FTTH/X components (Splitter)
- end connections (single incoming/multiple outgoing)
- power test

Duration: 10:00	Duration: 30:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Trace the passive network components and their deployment environment • Outline the concept of feeder and distribution connections in a splitter • Distinguish types of optical splitter and relative features • Identify the splitter required on ground • Demonstrate installation for wall mount splitters (1X8, 1X16, 1X32) • Identify feeder and distribution – ports, cables/pigtails and connections on the devices • Define power test procedure and principle • Test the optical splitters – insertion loss and power output measurement (using OLTS and Light Source) 	<ul style="list-style-type: none"> • passive network components and their deployment environment • principle of operation of optical splitters • concept of feeder and distribution connections in a splitter • types of optical splitters and relative features/limitations • power test procedure and principle
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, Optical splitters, Pigtails Personal Protection Equipment: safety glasses, head protection, rubber gloves, safety footwear, warning signs and tapes, fire extinguisher and first aid kit	

Module 5: In-building FTTH/X Cabling Mapped to TEL/N4201

Terminal Outcomes:

- Demonstrate cable installation through cable trays (horizontal/vertical)
- cable installation through conduits
- cable installation through false ceiling
- terminations at ONT and TO

Duration: 20:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Distinguish fiber optic cable types and characteristics for in-building deployments • Classify fiber handling practices (bend radius) • Describe the fiber cable components (strength members, cable sheath, core, cladding etc.) • Explain the fusion splicing • Understand the VLF principal and testing features • Describe the importance and use of fiber pulling tools/equipment (fish tape) • Explain the importance and relevance of managing cable slack and cable management • Record the documentation practices 	<ul style="list-style-type: none"> • Identify optical fiber types and characteristics for in-building deployments • Measure the bend radius of fiber cable and fusion splicing • Test the VLF principal and use of fiber pulling tools/equipment (fish tape) • Inspect the sites and identify the cabling path from outdoor fiber landing point to ONT installation point • Calculate the horizontal and vertical cable length to manage the cable slack • Measure the pre-existing load and post-installation load compliance of the cable trays • Lay the fiber along the identified tray tracks using appropriate cable pulling method • Tie the fiber along the cable tray • Demonstrate fiber pulling through conduits using appropriate tools (like fish tape) and technique (strength member) • Secure excess fiber at the termination point • Demonstrate cable installation through conduits on false ceiling • Illustrate fiber termination at Optical Network Terminal (ONT) & Telecommunication Outlet (TO) • Configure the ONT after providing power supply • Test ONT using IP network • Operate Visual Fault Locator (VFL) for the installed fiber run • Test the live fiber using fiber detection meter

	<ul style="list-style-type: none">Record the test values
Classroom Aids:	
White board/ black board marker / chalk, duster, computer or Laptop attached to LCD projector	
Tools, Equipment and Other Requirements	
Fiber cables, Fish tape, ONT, Cable trays, VFL, Fiber detection meter Personal Protection Equipment: safety glasses, head protection, rubber gloves, safety footwear, warning signs and tapes, fire extinguisher and first aid kit	

Module 6: Work Safety with fiber optics

Mapped to TEL/N4131 v2.0

Terminal Outcomes:

- Work safety practices whilst working with fiber optics

Duration: 20:00	Duration: 20:00
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 7: 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 8: 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 9: On-the-Job Training

Mapped to Fiber to-the Home (FTTH/X) Installer

Mandatory Duration: 120:00	Recommended Duration: 00:00
Location: On-Site	
Terminal outcomes	
<ul style="list-style-type: none"> • Explain 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. • Handle key equipment and their characteristics (blowing equipment, cable pulling tools etc.) • Need for proper trenching, ducting, aerial messages/supports and best practices • Principles of optical transport media and ofc communication • Knowledge of optical fiber characteristics like refraction, polarization, attenuation, dispersion • Bands in optical fiber and their usability, loss characteristics • Signal strength and quality kpis – design values and margins • Functionality of optical equipment like cleaver, mechanical and fusion splicing kit, protection sleeves, fiber stripper, fiber reinforced plaster during splicing and jointing • Functionality of optical test equipment like otdr and power meter • Optimal values of otdr, power meter and light meter test results • Utility of as made route diagrams • Standard trenching, cable laying, pit preparation, splicing, jointing, blowing and back-filling process for installation of ofc cables • Different types of ofc connectors based on the type of equipment • Standard process and need for performing duct integrity tests like air tightness • Passive network components and their deployment environment • Principle of operation of optical splitters • Concept of feeder and distribution connections in a splitter • Types of optical splitters and relative features/limitations • Power test procedure and principle • Fiber optic cable types and characteristics for in-building deployments • Basic knowledge of electrical and electronic components • Fiber handling practices (bend radius) • fiber cable components (strength members, cable sheath, core, cladding etc.) • Fusion splicing • VLF (Visual Fault Locator) principal and testing features • Importance and use of fiber pulling tools/equipment (fish tape) • Importance and relevance of managing cable slack and cable management • documentation practices 	

Module 10: DGT/VSQ/N0101 Employability Skills (30 hours)

Mapped to Fiber to the Home (FTTHX) Installer

Mandatory Duration: 30:00

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 importance of Employability Skills in meeting the job requirements. 	1
2.	Constitutional values - Citizenship	<ul style="list-style-type: none"> 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
3.	Becoming a Professional in the 21st Century	<ul style="list-style-type: none"> Discuss 21st century skills. Display positive attitude, self-motivation, problem solving, time management skills and continuous learning mindset in different situations. 	1
4.	Basic English Skills	<ul style="list-style-type: none"> Use appropriate basic English sentences/phrases while speaking. 	2
5.	Communication Skills	<ul style="list-style-type: none"> Demonstrate how to communicate in a well-mannered way with others. Demonstrate working with others in a team. 	4
6.	Diversity & Inclusion	<ul style="list-style-type: none"> Show how to conduct oneself appropriately with all genders and PwD. Discuss the significance of reporting sexual harassment issues in time. 	1
7.	Financial and Legal Literacy	<ul style="list-style-type: none"> 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
8.	Essential Digital Skills	<ul style="list-style-type: none"> 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
9.	Entrepreneurship	<ul style="list-style-type: none"> Discuss the need for identifying opportunities for potential business, sources for arranging money and potential legal and financial challenges. 	7
10.	Customer Service	<ul style="list-style-type: none"> 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
11	Getting ready for apprenticeship & Jobs	<ul style="list-style-type: none"> 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

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 (Fiber to the Home (FTTHX) Installer)

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
12th	Science/ Electrical/Electronics/ IT and other relevant fields	1	Optical Fiber Domain 1 year	0	NA	Eligible for ToT Program

Trainer Certification	
Domain Certification	Platform Certification
Job Role: “Fiber to-the Home (FTTH/X) Installer” - Level 3” “TEL/Q4200 v3.0”, Minimum accepted score is 80%	Job Role: “Trainer (VET and Skills)”, “MEP/Q2601 v2.0”, Minimum accepted score is 80%

Assessor Requirements (Fiber to the Home (FTTHX) Installer)

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
12th	Science/ Electrical/Electronics/ IT and other relevant fields	1	Optical Fiber Domain 1 year	0	NA	Eligible for ToA Program

Assessor Certification	
Domain Certification	Platform Certification
Job Role: “Fiber to-the Home (FTTH/X) Installer” - Level 2” “TEL/Q4200 v3.0”, Minimum accepted score is 80%	Job Role: “Assessor (VET and Skills)” “MEP/Q2701 v2.0”, Minimum accepted score is 80%

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:
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 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 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 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
 - 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 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
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
OTDR	Optical Time Domain Reflectometer
OLTS	Optical Loss Test Set
VFL	Visual Fault Locator
SM	Single Mode
MM	Multi-Mode
DFR	Duct Fill Ratio
ITU	International Telecommunication Union
MSDS	Material Safety Data Sheet
OLT	Optical Line Terminal
ONT	Optical Network Terminal
ES	Employability Skills