



Model Curriculum

QP Name: Field Technician Networking and Storage

QP Code: ELE/Q4606

QP Version: 3.0

NSQF Level: 4

Model Curriculum Version: 3.0

Electronics Sector Skills Council of India || 155, 2nd Floor, ESC House, Okhla Industrial Area- Phase 3, New Delhi- 110020

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Training Parameters

Sector	Electronics
Sub-Sector	Consumer Electronics & IT Hardware
Occupation	After Sales Support
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7422.2101
Minimum Educational Qualification and Experience	8th Grade Pass + NTC (2 years after 8th) + 2 Year NAC/relevant Experience) OR 10th Grade pass + 2 Year NTC/NAC/ relevant experience OR Certificate-NSQF (Level-3 in Maintenance Technician) with 2 Years of relevant Experience OR 12th Class and 18 Years
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	27/01/2022
Next Review Date	27/06/2025
NSQC Approval Date	27/01/2022
QP Version	3.0
Model Curriculum Creation Date	27/01/2022
Model Curriculum Valid Up to Date	27/06/2025
Model Curriculum Version	3.0
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:

- Describe the process of engaging with the customers.
- Demonstrate the process of Installing, configuring and setting up the networking and storage system.
- Demonstrate the process of carrying out troubleshooting and fixing equipment.
- Explain the importance of following inclusive practices for all genders and PwD at work.
- Demonstrate various practices to be followed to maintain health and safety at work.

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 (Recommended)	On-the-Job Training Duration (Mandatory)	Total Duration
Bridge Module	06:00	04:00	00:00	00:00	10:00
Module 1: Introduction and orientation to the role of a Field Technician Networking and Storage	06:00	04:00	00:00	00:00	10:00
ELE/N4601: Engaging with the customers	30:00	60:00	00:00	50:00	140:00
Module 2: Process of engaging with the customers	30:00	60:00	00:00	50:00	140:00
ELE/N4612: Installing, configuring and setting up the networking and storage system	30:00	60:00	00:00	50:00	140:00

Module 3: Process of Installing, configuring and setting up the networking and storage system	30:00	60:00	00:00	50:00	140:00
ELE/N4613: Troubleshooting and fix equipment	60:00	80:00	00:00	50:00	190:00
Module 4: Process of carrying out troubleshooting and fixing equipment	60:00	80:00	00:00	50:00	190:00
ELE/N9905 Work effectively at the workplace	15:00	15:00	00:00	00:00	30:00
Module 5: Soft Skills and Work Ethics	15:00	15:00	00:00	00:00	30:00
ELE/N1002 Apply health and safety practices at the workplace	15:00	15:00	00:00	00:00	30:00
Module 6: Basic Health and Safety Practice	15:00	15:00	00:00	00:00	30:00
DGT/VSQ/N0102- Employability Skills (60 Hours)	24:00	36:00	00:00	00:00	60:00
Module 7: Employability Skills (60 Hours)	24:00	36:00	00:00	00:00	60:00
Total Duration	180:00	270:00	00:00	150:00	600:00

Module Details

Module 1: Introduction and orientation to the role of a Field Technician Networking and Storage *Bridge Module*

Terminal Outcomes:

- Discuss the job role of a Field Technician Networking and Storage.

Duration: 06:00	Duration: 04:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Describe the size and scope of the electronic industry and its sub-sectors. • Discuss the role and responsibilities of a Field Technician Networking and Storage. • Describe various employment opportunities for a Field Technician Networking and Storage. 	<ul style="list-style-type: none"> • Familiarization with the Networking System and its components
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
NA	

Module 2: Process of engaging with the customers

Mapped to ELE/N4601

Terminal Outcomes:

- Describe the process of interacting with the customer prior to visit.
- Describe the process of interpreting customer requirements to suggest possible solutions.

Duration: 30:00	Duration: 60:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • State company’s products and recurring problems. • Explain company’s policies on customer care and code of conduct. • State various behavioural aspects and etiquette to be followed at customer’s premises. • Explain basic electronics of system hardware. • List the relevant reference sheets, manuals and documents to carry in the field. • State the necessary precautions to be taken while handling field calls and dealing with customers. 	<ul style="list-style-type: none"> • Demonstrate how to enquire from the customer about the problem by asking open and close ended questions. • Roleplay how to communicate to the customers the resolution time taken, repair process and possible cost for the service or inclusion under warranty and seek approval from the customer.
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
NA	

Module 3: Process of Installing, configuring and setting up the networking and storage system

Mapped to ELE/N4612

Terminal Outcomes:

- Demonstrate the process of installing network, server, storage devices and setting up the software.
- Explain the importance of educating the customer about system usage.

Duration: 30:00	Duration: 60:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the use of hardware equipment manufacturer recommended tools. • State the specification and the procedures to be followed for setting up the server system. • Explain networking, its purpose and functionalities to assemble and set up server and storage system. • Explain different types of servers and storage hardware equipment and their standard installation procedure. • Explain design architecture for system configuration. • Describe the process of operating and loading networking driver. • Describe the process of assembling and dismantling of components / modules in hardware equipment. • Explain different types of IT hardware products and functionalities. • State various quality standards to be followed. • Explain how to operate the system and other hardware peripherals. • State company's portfolio of products and that of competitors. • Explain computer operation and use of Microsoft word, excel for documentation and reporting. 	<ul style="list-style-type: none"> • Demonstrate how to check site conditions, open the packaging of new product and take out the hardware carefully. • Show how to interpret the system design requirement of customer and place the system at a location as preferred by customer. • Show how to connect all the hardware devices such as servers, storage device, networking devices and connect battery, plug in and switch on the system. • Demonstrate the process of performing configuration of networking device such as router by building a configuration file. • Show how to log and upload the configuration of networking equipment. • Demonstrate the process of installing the appropriate application software as per server and storage requirement and the network device driver. • Show how to connect the networking device, servers or storage and check system functions. • Demonstrate the process of performing unit and integration testing as per design requirement. • Demonstrate the process of performing testing of product functionality after hardware,

	<p>software, operating system and peripheral integration with reference to the installation manual.</p> <ul style="list-style-type: none"> • Show how to resolve the device related queries and issues raised by the customer.
<p>Classroom Aids</p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p>Tools, Equipment and Other Requirements</p>	
<p>Post cards, Screw Driver, Cables (RJ45), Network switch, Routers, Server, LAN Tester, Crimping tool</p>	

Module 4: Process of carrying out troubleshooting and fixing equipment

Mapped to ELE/N4613

Terminal Outcomes:

- Describe the process of interpreting customer complain.
- Describe the process of diagnosing the problem.
- Demonstrate the process of replacing the faulty module.
- Explain the need of apprising the customer after repair/replacement.
- Describe the process of completing documentation.

Duration: 60:00	Duration: 80:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain different types of equipment and peripherals in a pack. • Explain company’s sales and after sales support policy. • Explain company’s policy on product’s warranty and other terms and conditions • Explain different electrical and mechanical modules in the product. • Explain different models of devices and their repair procedures. • Explain the use of other specific devices for repairs such as soldering iron, multimeter, POST cards. • Describe the procedures to be followed for trouble shooting and standards to follow. • Explain peripherals and their standard operating procedure for disassembling and re-assembling. • Explain controls of different peripherals. • List various tools required for repair such as soldering iron, multimeter. 	<ul style="list-style-type: none"> • Demonstrate how to analyse the warranty, terms and conditions with relation to the product. • Show how to commence field trip based on type of complaint and carry troubleshooting instruction sheet. • Show how to conduct root-cause analysis to identify and diagnose the likely problem/issue in networking device. • Demonstrate the process of performing disassembling to check each part of networking, servers / storage system to isolate the failed module. • Demonstrate the process of performing the steps to disassemble the system, remove and replace and re-assemble the system, if the module has to be replaced. • Demonstrate the process of performing steps to reinstall the software or fix the issues, if there is any operating system error or software related issues. • Demonstrate the process of performing testing of product or functions after new hardware modules or software is installed. • Show how to report work status through proper documentation as per company’s standards.
Classroom Aids	

Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop

Tools, Equipment and Other Requirements

Post cards, Screw Driver, Cables (RJ45), Network switch, Routers, Server, LAN Tester, Crimping tool

Module 5: Soft Skills and Work Ethics

Mapped to ELE/N9905

Terminal Outcomes:

- Work effectively at the workplace.
- Implement the practices related to gender and PwD sensitization.

Duration: 15:00	Duration:15:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • State the importance of work ethics and workplace etiquette • State the importance of effective communication and interpersonal skills. • Explain ways to maintain discipline at the workplace. • Discuss the common reasons for interpersonal conflict and ways of managing them effectively. • Discuss the importance of following organisational guidelines for dress code, time schedules, language usage and other behavioural aspects. • Explain the importance of working as per the workflow of the organisation to receive instructions and report problems. • Explain the importance of conveying information/instructions as per defined protocols to the authorised persons/team members. • Explain the common workplace guidelines and legal requirements on non-disclosure and confidentiality of business-sensitive information. • Describe the process of reporting grievances and unethical conduct such as data breaches, sexual harassment at the workplace, etc. • Explain the concept and importance of gender sensitivity and equality. • Discuss ways to create sensitivity for different genders and Persons with Disabilities (PwD). 	<ul style="list-style-type: none"> • Develop a sample plan to achieve organisational goals and targets. • Create a sample feedback form to obtain feedback from customers, colleagues etc. • Roleplay to demonstrate the use of professional language and behaviour that is respectful of PwD and all genders. • Apply organisational protocol on data confidentiality and sharing only with the authorised personnel.

<ul style="list-style-type: none">• Discuss ways of dealing with heightened emotions of self and others.	
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Sample Of Escalation Matrix, Organization Structure.	

Module 6: Basic Health and Safety Practice

Mapped to ELE/N1002

Terminal Outcomes:

- Apply health and safety practices at the workplace.

Duration: 15:00	Duration: 15:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss job-site hazards, risks and accidents. • Explain the organizational safety procedures for maintaining electrical safety, handling tools and hazardous materials. • Elaborate on electronic waste disposal procedures. • Describe the process of disposal of hazardous waste • List the name and location of concerned people, documents and equipment for maintaining health and safety in the workplace. • Describe how to interpret warning signs while accessing sensitive work areas. • Explain the importance of good housekeeping. • Describe the importance of maintaining appropriate postures while lifting heavy objects. • List the types of fire and fire extinguishers. • Explain the importance of efficient utilisation of water, electricity and other resources. • List the common sources of pollution and ways to minimize it. • Describe the concept of waste management and methods of disposing hazardous waste. • Explain various warning and safety signs. • Describe different ways of preventing accidents at the workplace. 	<ul style="list-style-type: none"> • Demonstrate the use of protective equipment suitable as per tasks and work conditions. • Prepare a report to inform the relevant authorities about any abnormal situation/behaviour of any equipment/system. • Administer first aid in case of a minor accident. • Demonstrate the steps to free a person from electrocution safely. • Administer Cardiopulmonary Resuscitation (CPR). • Demonstrate the application of defined emergency procedures such as raising alarm, safe/efficient, evacuation, moving injured people, etc. • Prepare a sample incident report. • Use a fire extinguisher in case of a fire incident. • Demonstrate the correct method of lifting and handling heavy objects.

Classroom Aids

Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop

Tools, Equipment and Other Requirements

Personal Protection Equipment: Safety Glasses, Head Protection, Rubber Gloves, Safety Footwear, Warning Signs and Tapes, Fire Extinguisher, First Aid Kit, Fire Extinguishers and Warning Signs.

Module 7: Employability Skills (60 Hours) Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Discuss about Employability Skills in meeting the job requirements
- Describe opportunities as an entrepreneur.
- Describe ways of preparing for apprenticeship & Jobs appropriately.

Duration: 24:00	Duration: 36:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain constitutional values, civic rights, responsibility towards society to become a responsible citizen • Discuss 21st century skills • Explain use of basic English phrases and sentences. • Demonstrate how to communicate in a well-behaved manner • Demonstrate how to work with others • Demonstrate how to operate digital devices • Discuss the significance of Internet and Computer/ Laptops • Discuss the need for identifying business opportunities • Discuss about types of customers. • Discuss on creation of biodata • Discuss about apprenticeship and opportunities related to it. 	<ul style="list-style-type: none"> • List different learning and employability related GOI and private portals and their usage • Show how to practice different environmentally sustainable practices. • Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, etc. • Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone • Demonstrate how to communicate in a well-mannered way with others. • Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette • Utilize virtual collaboration tools to work effectively • Demonstrate how to maintain hygiene and dressing appropriately. • Perform a mock interview
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	

Tools, Equipment and Other Requirements

Computer, UPS, Scanner, Computer Tables, LCD Projector, Computer Chairs, White Board

OR

Computer Lab

Module 8: On-the-Job Training

Mapped to Field Technician Networking and Storage

Mandatory Duration: 150:00	Recommended Duration: 00:00
Location: On Site	
<p>Terminal Outcomes</p> <ol style="list-style-type: none"> 1. Enquire from the customer about the problem by asking open and close ended questions. 2. Communicate to the customers the resolution time taken, repair process and possible cost for the service or inclusion under warranty and seek approval from the customer. 3. Check site conditions, open the packaging of new product and take out the hardware carefully. 4. Interpret the system design requirement of customer. 5. Connect all the hardware devices such as servers, storage device, networking devices and connect battery, plug in and switch on the system. 6. Perform configuration of networking device such as router by building a configuration file. 7. Perform testing of product functionality after hardware, software, operating system and peripheral integration with reference to the installation manual. 8. Perform the steps to disassemble the system, remove and replace and re-assemble the system, if the module has to be replaced. 9. Conduct root-cause analysis to identify and diagnose the likely problem/issue in networking device. 10. Perform testing of product or functions after new hardware modules or software is installed. 11. Communicating effectively at the workplace. 12. Applying health and safety practices at the workplace. 	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Diploma/ I.T.I/ Certified in CITS Trade	Electronics/ Mechanical / Electrical	1	Networking and Storage	1 year preferably	Electronics	

Trainer Certification	
Domain Certification	Platform Certification
<p>“Field Technician Networking and Storage”, “ELE/Q4606, v3.0”, Minimum accepted score is 80%</p>	<p>Recommended that the Trainer is certified for the Field Technician – Networking & Storage “Trainer (VET and Skills)”, mapped to the Qualification Pack: “MEP/Q2601, V2.0”, with minimum score of 80%</p>

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
Diploma/ I.T.I/ Certified in CITS Trade	Electronics/ Mechanical / Electrical	2	Networking and Storage	1 year preferably	Electronics	

Assessor Certification	
Domain Certification	Platform Certification
<p>“Field Technician Networking and Storage”, “ELE/Q4606, v3.0”, Minimum accepted score is 80%</p>	<p>Recommended that the Assessor is certified for the Field Technician – Networking & Storage “Assessor (VET and Skills)”, mapped to the Qualification Pack: “MEP/Q2701, V2.0”, with minimum score of 80%</p>

Assessment Strategy

1. Assessment System Overview:

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

2. Testing Environment

To ensure a conducive environment for conducting a test, the trainer will:

- 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 10 a.m. and 5 p.m. respectively
- Ensure there are 2 Assessors if the batch size is more than 30.
- 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
- The assessor must be ToA certified and the trainer must be ToT Certified
- The assessment agency must follow the assessment guidelines to conduct the assessment

4. Types of evidence or evidence-gathering protocol:

- Time-stamped & geotagged reporting of the assessor from assessment location
- Centre 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:

To verify the details submitted by the training centre, the assessor will undertake:

- A surprise visit to the assessment location
- A random audit of the batch
- A random audit of any candidate

6. Method for assessment documentation, archiving, and access

To protect the assessment papers and information, the assessor will ensure:

- 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 on the Hard drive

References

Glossary

Term	Description
Declarative knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
Key Learning	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
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
ISO	International Organization for Standardization
NCO	National Occupational Standards
NOS	National Skills Qualification Committee
NSQF	National Skills Qualification Framework
OJT	On-the-Job Training
OMR	Optical Mark Recognition
PC	Performance Criteria
PwD	Persons with Disabilities
QP	Qualification Pack
SDMS	Skill Development & Management System
SIP	Skill India Portal
SME	Small and Medium Enterprises
SOP	Standard Operating Procedure
SSC	Sector Skill Council
TC	Trainer Certificate
ToA	Training of Assessors
ToT	Training of Trainers
TP	Training Provider