



Model Curriculum

QP Name: Service Technician – Home Appliances

QP Code: ELE/Q3111

QP Version: 4.0

NSQF Level: 4

Model Curriculum Version: 4.0

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 Service
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7421.0701
Minimum Educational Qualification and Experience	12th grade or equivalent OR 10th grade or equivalent with 3 years relevant experience OR Certificate-NSQF (Level-3 in relevant domain) with 3 Years of relevant Experience # Relevant Experience in Consumer Electronics & IT Hardware
Pre-Requisite License or Training	NA
Minimum Job Entry Age	NA
Last Reviewed On	07/10/2025
Next Review Date	07/10/2028
NSQC Approval Date	07/10/2025
QP Version	4.0
Model Curriculum Creation Date	07/10/2025
Model Curriculum Valid Up to Date	07/10/2028
Model Curriculum Version	4.0
Minimum Duration of the Course	510 Hours
Maximum Duration of the Course	510 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 customer with service.
- Demonstrate the process of installation and repair Appliances.
- 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
ELE/N3101: Engage with customer for service	60:00	90:00	00:00	60:00	210:00
Module 1: Role of Service Technician – Home Appliances and Engage with customer for service	60:00	90:00	00:00	60:00	210:00
ELE/N3112: Install and repair appliances	60:00	120:00	00:00	90:00	270:00
Module 2: Install and repair appliances	60:00	120:00	00:00	90:00	270:00
DGT/VSQ/N0101- Employability Skills (30 Hours)	30:00	00:00	00:00	00:00	30:00
Module 3: Employability Skills (30 Hours)	30:00	00:00	00:00	00:00	30:00
Total Duration	150:00	210:00	00:00	150:00	510:00

Module Details

Module 1: Role of Service Technician – Home Appliances and Engage with customer for service

Mapped to ELE/N3101

Terminal Outcomes:

- Explain the importance of interacting with customer.
- Explain the need of suggesting possible solutions.

Duration: 60:00	Duration: 90:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
• Describe the role and responsibilities of a Service Technician – Home Appliances; explain the scope of the home appliance service industry, types of appliances handled (such as washing machines, refrigerators, microwave ovens, and air conditioners), and available career opportunities in the repair and maintenance sector. • Understand the importance of effective customer engagement in delivering quality service. • Identify key principles of customer service, including professionalism, empathy, responsiveness, and accountability. • Describe different types of customers and their expectations in service-based interactions. • Explain verbal and non-verbal communication techniques for building trust and rapport with customers. • Understand the stages of the customer service process: greeting, identifying needs, providing solutions, closing interaction, and follow-up. • Recognize common service challenges and appropriate conflict resolution strategies. • Understand the role of service-level agreements (SLAs), warranties, and company policies in customer interactions. • Explain documentation requirements related to service requests, customer feedback, and issue resolution.	• Greet customers professionally and establish a positive first impression. • Use active listening and appropriate questioning to accurately identify customer needs or concerns. • Provide clear, concise, and accurate information or solutions based on service requirements. • Communicate technical or complex information in a customer-friendly manner. • Demonstrate empathy and professionalism when dealing with complaints or difficult situations. • Manage service interactions through various channels (e.g., in-person, phone, email, or digital platforms). • Escalate issues to appropriate personnel or departments when necessary, following proper procedures. • Document customer interactions, service requests, and resolutions accurately and promptly. • Seek feedback from customers to improve service quality and identify areas for personal improvement. • Maintain a positive, respectful, and service-oriented attitude throughout all customer engagements.

• Understand the importance of active listening and effective questioning techniques. • Recognize the impact of customer satisfaction on business performance and brand reputation.	
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
NA	

Module 2: Install and repair appliances

Mapped to ELE/N3112

Terminal Outcomes:

- Describe the process of preparing for installation of the appliances.
- Demonstrate the process of installing refrigerator, inverter air conditioner, automatic washing machine, waterpurifier at customer location.
- Demonstrate the process of diagnosing, repairing and replacing the faulty module of appliances.

Duration: 60:00	Duration: 120:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
• Understand the types and functions of common household and commercial appliances (e.g., refrigerators, automatic washing machines, inverter air conditioners, ovens, water heaters etc). • Identify the electrical and mechanical components of various appliances and their operating principles. • Explain the standard procedures for safe installation and commissioning of appliances. • Interpret wiring diagrams, installation manuals, and technical specifications. • Understand common appliance faults, their causes, and appropriate diagnostic methods. • Integrate components and perform visual and functional inspections to ensure proper connectivity and alignment of parts such as control boards, sensors, motors, compressors (in inverter ACs), and drum assemblies (in automatic washing machines). • Recognize safety standards, codes of practice, and manufacturer guidelines relevant to appliance installation and repair. • Describe the tools, equipment, and materials used in appliance servicing. • Understand the importance of grounding, circuit protection, and load requirements. • Learn about energy efficiency standards, labels, and environmentally responsible practices. • Understand documentation procedures such as service reports, warranty claims, and inspection checklists.	• Prepare the work area and ensure compliance with electrical safety and personal protective equipment (PPE) requirements. • Unpack, inspect, and position appliances according to manufacturer and site requirements. • Install appliances, including necessary electrical and water connections, leveling, and anchoring. • Perform wiring and plug installations, ensuring proper polarity and secure connections. • Test appliances for correct operation using relevant tools (e.g., multimeter, insulation tester, leak detector). • Diagnose faults such as electrical failure, leaks, mechanical wear, or control malfunction. • Replace or repair faulty components such as fuses, thermostats, motors, belts, and valves. • Restore appliances to safe and functional condition after repair or replacement work. • Complete post-installation testing, calibration, and commissioning procedures. • Install and repair smart home appliances using IoT integration, CMR mobile apps for setup, and advanced fault detection systems for efficient and accurate repairs. • Document work completed, customer feedback, and any follow-up or safety recommendations.

Classroom Aids

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

Tools, Equipment and Other Requirements

Different types of Refrigerators, Multi-meter, Pressure Gauge, Electrical Drill, Clamp Meter, Tube Cutter, Tube Bender, Vacuum Pump, Weighing Scale, Gas Cylinder, Temperature meter, Spanner, Screw Driver set

Module 3: Employability Skills (30 Hours)

Mapped to DGT/VSQ/N0101

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: 30:00	Duration: 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
• 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.	
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 4: On-the-Job Training

Mapped to Service Technician – Home Appliances

Mandatory Duration: 150:00	Recommended Duration: 00:00
Location: On Site	
Terminal Outcomes 1. Check the warranty status of the appliance and annual maintenance contract. 2. Clearing up the packaging material waste and disposing it as per company's norms. 3. Fitting water-disposal beaker, handle, shelves, basket and side buckets. 4. Diagnose the fault. 5. Perform basic tests such as power supply inspection, volt ampere test and earth test power supply. 6. Reassemble the unit to check that all the modules of the unit are working as per specifications. 7. Inspect the tools and fitments required for the installation are available. 8. Align the air conditioner as per the instructions manual and make necessary power supply connections. 9. Prepare sample documents for recording installation/repair of air conditioner and update the company ERP software for tracking/future references. 10. Communicating effectively at the workplace. 11. 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/ ITI/ Certified in relevant CITS Trade	Electrical/ Electronics/ Mechanical	1	After Sales Services	1	Electronics	

Trainer Certification	
Domain Certification	Platform Certification
“Service Technician – Home Appliances”, “ELE/Q3111, v4.0”, Minimum accepted score is 80%	Recommended that the Trainer is certified for the Service Technician – Home Appliances “Trainer (VET and Skills)”, mapped to the Qualification Pack: “MEP/Q2601, V2.0”, with minimum score of 80%

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
Diploma/ ITI/ Certified in relevant CITS Trade	Electrical/ Electronics/ Mechanical	2	After Sales Services	1	Electronics	

Assessor Certification	
Domain Certification	Platform Certification
“Service Technician – Home Appliances”, “ELE/Q3111, v4.0”, Minimum accepted score is 80%	Recommended that the Assessor is certified for the Service Technician – Home Appliances “Assessor (VET and Skills)” , mapped to the Qualification Pack: “MEP/Q2701, V2.0”, with minimum score of 80%

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

