



# Model Curriculum

**QP Name: TV Repair Technician**

**QP Code: ELE/Q3101**

**QP Version: 3.0**

**NSQF Level: 3**

**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

<b>Sector</b>	Electronics
<b>Sub-Sector</b>	Consumer Electronics & IT Hardware
<b>Occupation</b>	After Sales Service
<b>Country</b>	India
<b>NSQF Level</b>	3
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/7421.1301
<b>Minimum Educational Qualification and Experience</b>	10th Grade Pass OR 8th Grade Pass + NTC (2 years after 8th) OR 8th Grade Pass + 2 years relevant experience and 18 Years
<b>Pre-Requisite License or Training</b>	NA
<b>Minimum Job Entry Age</b>	18 Years
<b>Last Reviewed On</b>	27/01/2022
<b>Next Review Date</b>	27/06/2025
<b>NSQC Approval Date</b>	27/01/2022
<b>QP Version</b>	3.0
<b>Model Curriculum Creation Date</b>	27/01/2022
<b>Model Curriculum Valid Up to Date</b>	27/06/2025
<b>Model Curriculum Version</b>	3.0
<b>Maximum Duration of the Course</b>	420 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 for service.
- Demonstrate the process of performing installation and repair of dysfunctional TVs.
- 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
<b>Bridge Module</b>	<b>20:00</b>	<b>10:00</b>	<b>00:00</b>	<b>00:00</b>	<b>30:00</b>
Module 1: Introduction and orientation to the role of a TV Repair Technician	20:00	10:00	00:00	00:00	30:00
<b>ELE/N3101 Engage with customer with service</b>	<b>20:00</b>	<b>40:00</b>	<b>00:00</b>	<b>60:00</b>	<b>120:00</b>
Module 2: Process of engaging with customer with service	20:00	40:00	00:00	60:00	120:00
<b>ELE/N3102: Install and repair dysfunctional TVs</b>	<b>20:00</b>	<b>70:00</b>	<b>00:00</b>	<b>90:00</b>	<b>180:00</b>
Module 3: Process of installing and repairing dysfunctional TVs	20:00	70:00	00:00	90:00	180:00
<b>ELE/N9972: Communicate and coordinate effectively</b>	<b>15:00</b>	<b>15:00</b>	<b>00:00</b>	<b>00:00</b>	<b>30:00</b>
Module 4: Process of communicating and coordinating effectively with others	15:00	15:00	00:00	00:00	30:00

<b>ELE/N1003: Work effectively, sustainably and safely</b>	<b>15:00</b>	<b>15:00</b>	<b>00:00</b>	<b>00:00</b>	<b>30:00</b>
Module 5: Work Ethics, sustainability and safety practice	15:00	15:00	00:00	00:00	30:00
<b>DGT/VSQ/N0101- Employability Skills (30 Hours)</b>	<b>30:00</b>	<b>00:00</b>	<b>00:00</b>	<b>00:00</b>	<b>30:00</b>
Module 6: Employability Skills (30 Hours)	30:00	00:00	00:00	00:00	30:00
<b>Total Duration</b>	<b>120:00</b>	<b>150:00</b>	<b>00:00</b>	<b>150:00</b>	<b>420:00</b>

# Module Details

## Module 1: Introduction and orientation to the role of a TV Repair Technician

### Bridge Module

#### Terminal Outcomes:

- Discuss the job role of a TV Repair Technician.

<b>Duration: 20:00</b>	<b>Duration: 10:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Describe the size and scope of the electronic industry and its sub-sectors.</li> <li>• Discuss the role and responsibilities of a TV Repair Technician.</li> <li>• Describe various employment opportunities for a TV Repair Technician.</li> </ul>	<ul style="list-style-type: none"> <li>• Introduction to the components related to the technician job role</li> </ul>
<b>Classroom Aids</b>	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
NA	

## Module 2: Process of engaging with customer with service

### Mapped to ELE/N3101

#### Terminal Outcomes:

- Describe the process of interacting with customer.
- Explain how to Suggest possible solutions.

<b>Duration: 20:00</b>	<b>Duration: 40:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the company’s policies on code of conduct, organisation's culture, customer care, reporting structure and documentation policy.</li> <li>• Explain the company’s products and recurring problems reported in consumer appliances.</li> <li>• State the precautions to be taken while handling field calls and dealing with customers.</li> <li>• Explain the importance of personal grooming with proper etiquettes at the customer's premises.</li> <li>• Explain the basic electrical, mechanical modules of various appliances and electronics involved in the type of appliance.</li> <li>• List models of different appliances, their common and distinguishing features, functionality of different features of appliances and new features.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate how to connect with the customer to confirm the problem telephonically and fix a time for the visit.</li> <li>• Show how to collect appropriate tools, parts, relevant reference sheets, manuals and documents.</li> <li>• Show how to check about warranty status of the appliance and annual maintenance contract.</li> </ul>
<b>Classroom Aids</b>	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
NA	

## Module 3 Process of installing and repairing dysfunctional TVs

### Mapped to ELE/N3102

#### Terminal Outcomes:

- Demonstrate the process of removing packaging and checking accessories.
- Demonstrate the process of installing the TV and checking functionality.
- Demonstrate the process of repairing dysfunctional TV.
- Explain the need of confirming functionality of the repaired unit.

<b>Duration: 20:00</b>	<b>Duration: 70:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain company’ policies on customer care, code of conduct, reporting structure and documentation.</li> <li>• Explain company’s sales, installation and after sales support policy.</li> <li>• Describe packaging waste disposal procedures.</li> <li>• Explain company’s policy on products warranty and other terms and conditions.</li> <li>• List various installation-site requirements (structural requirements).</li> <li>• Explain different types of TVs such as CRT TV, LED TV, LCD TV.</li> <li>• Explain basic electrical faults such as improper earthing, defective power cord, connector or internal wiring defect, short/ loose/open contacts, blown fuse , defective transformer.</li> <li>• List various safety precautions to be taken while installing.</li> <li>• Describe manual-based procedure of installing the TV set.</li> <li>• Explain various problems occurred due to improper TV adjustments such as user picture adjustment, focus adjustment etc.</li> <li>• Explain different features and functionalities of various models.</li> <li>• Explain functioning of various sub systems of CRT television set and</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate how to remove the packaging of the appliance delivered at the customer location.</li> <li>• Show how to clear up the packaging material waste and dispose as per company’s norms.</li> <li>• Show how to measure length from the floor and the sides of the wall for drilling holes (if applicable).</li> <li>• Demonstrate the process of attaching mounting brackets at the back side of the TV in case of wall mounting.</li> <li>• Demonstrate how to insert anchors into drilled holes, concealing necessary wires and connect from the nearest power supply.</li> <li>• Demonstrate the process of installing the TV unit on appropriate stand/platform/wall mount while maintaining appropriate distance from the floor and walls as per instruction manual.</li> <li>• Show how to plug in the power supply and demonstrate the features, utility of the TV set/remote control.</li> <li>• Show how to diagnose the fault in the unit as per customer interaction and initial inspection like power supply module etc.</li> <li>• Demonstrate the process of removing the TV from the wall.</li> <li>• Demonstrate the process of removing the screws attached to</li> </ul>



<p>basic television technology.</p> <ul style="list-style-type: none"> <li>• Explain faults common to all types of television models and faults specific to different models.</li> <li>• Explain the features of different television models of the company.</li> <li>• Explain television receiver fundamentals and CRT basics.</li> <li>• Explain the fundamentals of electricity such as Ohms law, difference between AC and DC, calculation of energy consumption of the appliance, domestic wiring, series and parallel connections.</li> <li>• Describe the process of carrying out troubleshooting of colour problems, vertical circuit, audio circuit, tuner circuit, remote control and other frequently occurring problems of TV.</li> <li>• List various components/modules of the CRT TV and their prices.</li> <li>• Explain basic electronics of components such as diode, transformer, LED, photo transistor, capacitor, resistor, inductor, thermistor.</li> <li>• Explain the importance of appliance placement.</li> </ul>	<p>the mounts and separate the rear cover from the system.</p> <ul style="list-style-type: none"> <li>• Demonstrate how to discharge any large capacitor and the charge stored in the cathode ray tube before diagnosis.</li> <li>• <b>Show how to</b> check the fuse to ensure that the capacitor has not blown off and follow the current path to identify the fault.</li> <li>• Demonstrate the process of repairing/replacing component at location, if the fault identified is due to damage of parts like fuse, PCBs etc.</li> <li>• Demonstrate how to reassemble the unit to check that all the modules of the unit are working as per specifications.</li> <li>• Demonstrate functionality of the unit to the customer.</li> <li>• Prepare sample documents related to complaint closure.</li> </ul>
<p><b>Classroom Aids</b></p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>Components like – Picture Tube, Transistor, Resistor, Capacitor, Inductor, Tuner, Transformer, Multi-meter, Soldering iron, CRO, Television sets with remote, Screw Drivers, Spanners, Pipe Cutter, Drill Machine, Multi-meter, Circuit Tester, Scissors, Pliers, Pencil, Wire running tools — fish/carpet tape, flex rods, electrical tape, Wall probe — piano wire, etc, Wall Mount Kit, Manual Guide, Antenna, STB, Measuring Tape, Hammer, Crimping Tools, Cutter/ knife</p>	

## Module 4: Process of communicating and coordinating effectively with others

*Mapped to ELE/N9972*

### Terminal Outcomes:

- Explain the importance of communicate effectively with supervisor and colleagues.
- Implement the practices related to gender and PwD sensitization.

<b>Duration: 15:00</b>	<b>Duration: 15:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the importance of personal grooming.</li> <li>• Explain the organisation's policy on code of conduct.</li> <li>• Explain the organisation's reporting structure and documentation policy.</li> <li>• Explain how to communicate effectively through all means including face-to-face, telephonic as well as written.</li> <li>• Explain different types of information that colleagues might need and the importance of providing the same as and when required.</li> <li>• Explain the rights and duties w.r.t PwD at workplace.</li> <li>• Explain the organisation policies and standards to support PwD.</li> </ul>	<ul style="list-style-type: none"> <li>• Show how to maintain personal hygiene and professional appearance.</li> <li>• Show how to report work completed as per the schedule to superior and inform of any deviations or anomalies.</li> </ul>
<b>Classroom Aids</b>	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
NA	

## Module 5: Work Ethics, sustainability and safety practice

### Mapped to ELE/N1003

#### Terminal Outcomes:

- Describe the process of achieving optimum productivity and quality.
- Explain the importance of implementing health and safety procedures.
- Demonstrate the process of organising waste management and recycling.
- Explain the importance of conserving resources.

Duration: 15:00	Duration: 15:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Explain the importance of time management.</li> <li>• Explain the organizational safety and health policy.</li> <li>• List different waste categories such as dry, wet, recyclable, non-recyclable and single-use plastic items.</li> <li>• Explain the usage of different colours of dustbins to dispose waste.</li> <li>• Explain the methods of waste disposal.</li> <li>• Explain the methods of recycling as well as repairing and reusing electronic components.</li> <li>• Explain the efficient utilisation of material and water.</li> <li>• Explain the basics of electricity and prevalent energy-efficient devices.</li> <li>• List ways to recognise common electrical problems.</li> <li>• List common practices of conserving electricity.</li> </ul>	<ul style="list-style-type: none"> <li>• Show how to take ESD precautions while doing work.</li> <li>• Demonstrate the use of appropriate Personal Protective Equipment (PPE).</li> <li>• Show how to identify and segregate recyclable/non-recyclable and hazardous wastes.</li> <li>• Demonstrate the process of cleaning the tools, machines and equipment.</li> <li>• Show how to connect electrical equipment and appliances properly when in use and turn off when not in use.</li> </ul>
<b>Classroom Aids</b>	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
NA	

## Module 6: 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.

<b>Duration: 30:00</b>	<b>Duration: 00:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain constitutional values, civic rights, responsibility towards society to become a responsible citizen</li> <li>• Discuss 21<sup>st</sup> century skills</li> <li>• Explain use of basic English phrases and sentences.</li> <li>• Demonstrate how to communicate in a well-behaved manner</li> <li>• Demonstrate how to work with others</li> <li>• Demonstrate how to operate digital devices</li> <li>• Discuss the significance of Internet and Computer/ Laptops</li> <li>• Discuss the need for identifying business opportunities</li> <li>• Discuss about types of customers.</li> <li>• Discuss on creation of biodata</li> <li>• Discuss about apprenticeship and opportunities related to it.</li> </ul>	
<b>Classroom Aids</b>	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
Computer, UPS, Scanner, Computer Tables, LCD Projector, Computer Chairs, White Board	
OR	
Computer Lab	

## Module 7: On-the-Job Training

### Mapped to TV Repair Technician

<b>Mandatory Duration: 150:00</b>	<b>Recommended Duration: 00:00</b>
<b>Location: On Site</b>	
<p><b>Terminal Outcomes</b></p> <ol style="list-style-type: none"> <li>1. Explain basic electrical faults such as improper earthing, defective power cord, connector or internal wiring defect, short/ loose/open contacts, blown fuse, defective transformer.</li> <li>2. Explain functioning of various sub systems of CRT television set and basic television technology.</li> <li>3. Attach mounting brackets at the back side of the TV in case of wall mounting.</li> <li>4. Insert anchors into drilled holes, concealing necessary wires and connect from the nearest power supply.</li> <li>5. Install the TV unit on the appropriate stand/platform/wall mount while maintaining the appropriate distance from the floor and walls as per the instruction manual.</li> <li>6. Diagnose the fault in the unit as per customer interaction and initial inspection like power supply module etc.</li> <li>7. Repair/replace the component at the location if the fault identified is due to damage of parts like a fuse, PCBs etc.</li> <li>8. Reassemble the unit to check that all the modules of the unit are working as per specifications.</li> <li>9. Use appropriate Personal Protective Equipment (PPE).</li> <li>10. Connect electrical equipment and appliances properly when in use and turn off when not in use.</li> </ol>	

## 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	TV Repairing	1 year preferably	Electronics	

Trainer Certification	
Domain Certification	Platform Certification
<p>“TV Repair Technician”, “ELE/Q3101, v3.0”, Minimum accepted score is 80%</p>	<p>Recommended that the Trainer is certified for the <b>TV Repair Technician</b> “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	TV Repairing	1 year preferably	Electronics	

Assessor Certification	
Domain Certification	Platform Certification
<p>“TV Repair Technician”, “ELE/Q3101, v3.0”, Minimum accepted score is 80%</p>	<p>Recommended that the Assessor is certified for the <b>TV Repair Technician</b> “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
<b>Declarative knowledge</b>	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.
<b>Key Learning</b>	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).
<b>OJT (M)</b>	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site
<b>OJT (R)</b>	On-the-job training (Recommended); trainees are recommended the specified hours of training on site
<b>Procedural Knowledge</b>	Procedural knowledge addresses how to do something, or how to perform a
<b>Training Outcome</b>	Training outcome is a statement of what a learner will know, understand and be able to do <b>upon the completion of the training.</b>
<b>Terminal Outcome</b>	Terminal outcome is a statement of what a learner will know, understand and be able to do <b>upon the completion of a module.</b> 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