# Model Curriculum

**QP Name: CCTV Installation Technician**

**QP Code: ELE/Q4605**

**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** | Security Surveillance |
| **Occupation** | After Sales Service |
| **Country** | India |
| **NSQF Level** | 4 |
| **Aligned to NCO/ISCO/ISIC Code** | NCO-2015/7411.0102 |
| **Minimum Educational Qualification and Experience** | Completed 3 year diploma after 10th (Electronics/Electrical /Mechanical) with NA of experience<br>OR<br>12th grade Pass (or Equivalent) with NA of experience<br>OR<br>10th Class with 3 Years of experience Security & Surveillances<br>OR<br>10th Class with 2 Years of experience NTC/NAC<br>OR<br>Certificate-NSQF (Level-3.5 in relevant domain) with 1.5 years of experience Security & Surveillances<br># Relevant experience in security and surveillances. |
| **Pre-Requisite License or Training** | NA |
| **Minimum Job Entry Age** | 18 Years |
| **Last Reviewed On** | 01.05.2025 |
| **Next Review Date** | 30.04.2028 |
| **NSQC Approval Date** | 08.05.2025 |
| **QP Version** | 4.0 |
| **Model Curriculum Creation Date** | 01.05.2025 |
| **Model Curriculum Valid Up to Date** | 30.04.2028 |
| **Model Curriculum Version** | 4.0 |
| **Minimum Duration of the Course** | 480 Hours |
| **Maximum Duration of the Course** | 480 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:

- Explain the importance of visiting site and understand the customer requirements.

- Demonstrate the process of installing the CCTV Camera.

- Demonstrate the process of setting up the CCTV surveillance system.

- 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 (Mandatory) | On-the-Job Training Duration (Recommended) | Total Duration |
|---|---|---|---|---|---|
| **ELE/N3182: Site Survey and Requirement Analysis** | **30:00** | **70:00** | **50:00** | **00:00** | **150:00** |
| Module 1: Visiting site and understand the customer requirements | 30:00 | 70:00 | 50:00 | 00:00 | 150:00 |
| **ELE/N3183: Deploying of monitoring system** | **30:00** | **30:00** | **30:00** | **00:00** | **90:00** |
| Module 2: Process of installing the CCTV Camera | 30:00 | 30:00 | 30:00 | 00:00 | 90:00 |
| **ELE/N3184: Setting up a surveillance system** | **30:00** | **50:00** | **70:00** | **00:00** | **150:00** |
| Module 3: Process of setting up the CCTV surveillance system | 30:00 | 50:00 | 70:00 | 00:00 | 150:00 |
| **ELE/N3185: Policies related to Data privacy and security** | **30:00** | **30:00** | **00:00** | **00:00** | **60:00** |
| Module 4: Adherence to Data Privacy Regulations | 30:00 | 30:00 | 00:00 | 00:00 | 60:00 |

| DGT/VSQ/N0101- Employability Skills (30 Hours) | 30:00 | 00:00 | 00:00 | 00:00 | 30:00 |
|---|---|---|---|---|---|
| Module 5: Employability Skills (30 Hours) | 30:00 | 00:00 | 00:00 | 00:00 | 30:00 |
| **Total Duration** | **150:00** | **180:00** | **150:00** | **00:00** | **480:00** |

# Module Details

## Module 1: Visiting site and understand the customer requirements
## Mapped to ELE/N3182

**Terminal Outcomes:**
- Communicate effectively with customers to understand their CCTV system needs and preferences.
- Assess the site layout and conditions to identify optimal camera placements and installation requirements.
- Recommend suitable CCTV systems, camera types, and monitoring solutions based on customer requirements and budget.
- Finalize and document all technical, logistical, and hardware-related details for CCTV system installation.
- Ensure high customer satisfaction through professional behavior, system education, and clear communication.

| Duration: 30:00 | Duration: 70:00 |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| <ul><li>Learn to interact professionally and courteously with customers.</li><li>Understand how to identify customer needs and expectations for CCTV systems.</li><li>Gain knowledge of interpreting basic site layouts for installation planning.</li><li>Learn to conduct site assessments and obtain necessary customer approvals.</li><li>Develop skills to suggest suitable CCTV solutions based on requirements.</li><li>Understand technical needs for various camera types and monitoring systems.</li><li>Learn to finalize installation details, including camera count and placement.</li><li>Acquire the ability to estimate installation time and cost accurately.</li><li>Improve customer satisfaction through clear communication and education.</li><li>Ensure quality service delivery through effective questioning and product knowledge</li></ul> | <ul><li>Demonstrate professional communication skills while greeting and interacting with customers.</li><li>Accurately record customer requirements and site layout details during an initial discussion.</li><li>Conduct an effective site survey to identify ideal camera placement and cabling routes.</li><li>Seek and document customer permissions for room access and site assessment.</li><li>Recommend suitable CCTV systems and components based on site conditions and customer needs.</li><li>Explain and suggest appropriate camera types, recording devices, and monitoring solutions.</li><li>Prepare and present a cost estimate and installation timeline to the customer for approval.</li><li>Confirm final installation details, including camera count, mounting points, and system placement.</li><li>Respond to customer queries, offer alternatives, and handle objections with practical solutions.</li><li>Demonstrate ability to educate the customer on CCTV system usage, maintenance, and future upgrades.</li></ul> |
| **Classroom Aids** | |

| Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop |
|---|
| **Tools, Equipment and Other Requirements** |
| |

# Module 2: Process of installing the CCTV Camera
## Mapped to ELE/N3183

**Terminal Outcomes:**
- Procure CCTV hardware that aligns with customer specifications, quality standards, and warranty requirements.
- Test and verify all CCTV components for functionality and readiness prior to installation.
- Accurately install and connect cameras, cabling, and power supplies using appropriate tools and techniques.
- Follow safety procedures, equipment guidelines, and industry standards during installation to ensure a secure and damage-free setup.
- Educate the customer on system usage, maintenance, and provide necessary documentation post-installation.

| Duration: 30:00 | Duration: 30:00 |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| <ul><li>Understand specifications, features, and warranty details of CCTV hardware components.</li><li>Learn documentation requirements for procurement and installation compliance.</li><li>Gain knowledge of different types of CCTV cameras, mounts, and protective enclosures.</li><li>Understand cable types, connectors, and best practices for cabling and power supply.</li><li>Learn to read and follow product manuals and standard operating procedures.</li><li>Understand safety and hazard management protocols during installation.</li><li>Acquire knowledge of industry standards for equipment quality and installation.</li><li>Understand how to ensure proper camera positioning for maximum coverage.</li><li>Learn how to assess power requirements and select suitable power supply options.</li><li>Understand legal and organizational compliance related to CCTV installations.</li></ul> | <ul><li>Demonstrate the ability to procure and verify hardware as per customer requirements.</li><li>Test and inspect CCTV equipment for faults before installation.</li><li>Lay and connect cables using BNC connectors and proper crimping techniques.</li><li>Mount cameras securely at appropriate height and angles for optimal surveillance.</li><li>Set up camera functions including pan, tilt, zoom, and focus settings.</li><li>Use hand tools safely and efficiently following installation protocols.</li><li>Install weatherproof enclosures and protect outdoor cabling from damage.</li><li>Ensure clean, damage-free, and concealed cabling during installation.</li><li>Verify system functionality and perform quality checks post-installation.</li><li>Educate customers on camera usage, warranty, and maintenance schedules.</li></ul> |
| **Classroom Aids** | |
| Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop | |

**Tools, Equipment and Other Requirements**

## Module 3: Process of setting up the CCTV surveillance system
### Mapped to ELE/N3184

**Terminal Outcomes:**
- Safely and efficiently install CCTV equipment and audio systems.
- Connect and configure all CCTV cameras, DVRs, monitors, and audio systems for seamless operation, ensuring full functionality.
- Complete the installation by verifying system performance, conducting necessary tests, and providing a working demo to the customer.
- Communicate effectively with customers, providing clear instructions on system operation, maintenance, and warranty terms.
- Achieve customer satisfaction by ensuring the system meets expectations, troubleshooting any issues, and completing the installation within the agreed timeline.

| Duration: 30:00 | Duration: 50:00 |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| <ul><li>Understand OHS requirements and proper use of Personal Protective Equipment (PPE) during CCTV installation.</li><li>Learn installation procedures for CCTV and audio systems as per specifications and safety standards.</li><li>Understand network configurations including DVR/IP setup, remote monitoring, and camera controls.</li><li>Gain knowledge of electrical and mechanical checks to ensure safe and reliable connections.</li><li>Learn proper documentation, reporting, and escalation protocols as per organizational procedures.</li><li>Understand software installation, IP configuration, and network connectivity for surveillance systems.</li><li>Learn customer interaction practices including system demonstration, instruction, and satisfaction follow-up.</li><li>Understand quality assurance procedures and techniques for testing CCTV functionality.</li><li>Learn to interpret and respond to changing site conditions or updated assignment instructions.</li></ul> | <ul><li>Demonstrate the ability to safely mount and connect CCTV and audio systems at customer sites.</li><li>Connect and configure DVR, monitor, cameras, and control units for full system functionality.</li><li>Set up and test pan, tilt, and zoom features as per customer specifications.</li><li>Install IP software and assign IP addresses for remote viewing and monitoring.</li><li>Perform a complete operational test of viewing, recording, and playback functionalities.</li><li>Identify and resolve common installation issues such as poor video quality or no signal.</li><li>Interact with customers to explain system usage, controls, and maintenance procedures.</li><li>Complete site clean-up, tool storage, and waste disposal post-installation.</li><li>Accurately document installation details and report to supervisors or management.</li><li>Conduct customer demonstrations and ensure full satisfaction with installed system.</li></ul> |
| **Classroom Aids** | |

| Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop |
|---|
| **Tools, Equipment and Other Requirements** |
| Camera, DVR, Cables, Adapter, Display Device, Screw driver set, Customer Application Form, Feedback Form |

# Module 4: Policies related to Data privacy and security
*Mapped to ELE/N3185*

**Terminal Outcomes:**
- Ensure compliance with applicable data privacy laws and regulations during CCTV installation.
- Implement secure installation practices, including strong passwords and encryption, to protect system integrity and customer data.
- Identify, report, and respond to security breaches or data vulnerabilities promptly and effectively.
- Maintain ethical standards and accurate documentation while educating customers on data privacy and secure usage of CCTV systems.

| Duration: 30:00 | Duration: 30:00 |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| <ul><li>Understand the importance of compliance with global and local data privacy regulations (e.g., GDPR, HIPAA).</li><li>Explain the ethical considerations involved in handling and accessing CCTV footage.</li><li>Describe best practices for securing CCTV system configurations, including password policies and encryption.</li><li>Identify potential data threats and vulnerabilities within CCTV networks.</li><li>Recognize the principles of data retention, including customer-defined policies and legal obligations.</li><li>Explain the significance of maintaining access control and limiting data access to authorized individuals.</li><li>Understand the process and importance of documenting system configurations and customer consents.</li><li>Describe incident response protocols in the event of a data breach or system vulnerability.</li><li>Explain the role of customer education in maintaining the security of CCTV systems.</li><li>Understand the legal and ethical consequences of unauthorized access, use, or distribution of CCTV data.</li></ul> | <ul><li>Install CCTV systems using secure methods to prevent physical tampering or unauthorized access.</li><li>Configure strong, unique passwords and disable or replace default device credentials.</li><li>Set up encryption protocols to secure video data transmission over networks.</li><li>Implement secure data storage systems aligned with defined retention policies.</li><li>Apply access control settings to restrict stored footage access to approved personnel only.</li><li>Test CCTV systems for potential vulnerabilities or misconfigurations post-installation.</li><li>Record and maintain detailed logs of installations, configurations, and data protection measures.</li><li>Assist customers in setting up secure user accounts and managing access rights.</li><li>Respond to and report detected security incidents in accordance with standard procedures.</li><li>Maintain an audit-ready record of customer consent forms, data access logs, and maintenance activities.</li></ul> |

| **Classroom Aids** |
| --- |
| Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop |
| **Tools, Equipment and Other Requirements** |
| Sample Of Escalation Matrix, Organization Structure. |

## Module 5: 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** |
| <ul><li>Explain constitutional values, civic rights, responsibility towards society to become a responsible citizen</li><li>Discuss 21$^{st}$ 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> | |
| **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<br><br>OR<br><br>Computer Lab | |

## Module 6: On-the-Job Training
### Mapped to CCTV Installation Technician

| Mandatory Duration: 150:00 | Recommended Duration: 00:00 |
| --- | --- |
| **Location: On Site** | |

**Terminal Outcomes**

1. Explain different types of DVR and their purposes.

2. Explain different types of electronic surveillance products and functionalities.

3. Ask open and close-ended questions to understand the customer requirement and expectation about the CCTV system.

4. Set up the type of camera such as pan, tilt, zoom unit as per customer requirement.

5. Install the appropriate software for IP network or remote monitoring.

6. Connect all the cameras installed to the DVR.

7. Perform demo of CCTV system operation with the customer.

8. Use professional language and behaviour that is respectful of PwD and all genders.

9. Administer first aid in case of a minor accident.

10. Use a fire extinguisher in case of a fire incident.

# 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 course | Electronics/ Electrical/ Mechanical | 1 | CCTV Installation | 1 year preferably | Electronics | |

| Trainer Certification | |
|---|---|
| **Domain Certification** | **Platform Certification** |
| "**CCTV Installation Technician**", "ELE/Q4605, v4.0", Minimum accepted score is 80% | Recommended that the Trainer is certified for the **CCTV Installation Technician** "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 course | Electronics/ Electrical/ Mechanical | 2 | CCTV Installation | 1 year preferably | Electronics | |

| Assessor Certification | |
|---|---|
| **Domain Certification** | **Platform Certification** |
| "**CCTV Installation Technician**", "ELE/Q4605, v4.0", Minimum accepted score is 80% | Recommended that the Assessor is certified for the **CCTV Installation Technician** "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 |