

Qualification Pack



CCTV Installation Technician

QP Code: ELE/Q4605

Version: 3.0

NSQF Level: 4

Electronics Sector Skills Council of India || 155, 2nd Floor, ESC House Okhla Industrial Area-Phase 3
New Delhi- 110020 || email:ceo@essc-india.org



Qualification Pack

Contents

ELE/Q4605: CCTV Installation Technician	3
<i>Brief Job Description</i>	3
Applicable National Occupational Standards (NOS)	3
<i>Compulsory NOS</i>	3
<i>Qualification Pack (QP) Parameters</i>	3
ELE/N4609: Visit Site and Understand Customer Requirement	5
ELE/N4610: Install the CCTV Camera	12
ELE/N4611: Setup the CCTV Surveillance System	21
ELE/N9905: Work effectively at the workplace	30
ELE/N1002: Apply health and safety practices at the workplace	38
DGT/VSQ/N0102: Employability Skills (60 Hours)	46
Assessment Guidelines and Weightage	53
<i>Assessment Guidelines</i>	53
<i>Assessment Weightage</i>	54
Acronyms	55
Glossary	56



Qualification Pack

ELE/Q4605: CCTV Installation Technician

Brief Job Description

The individual at work is responsible for installing the CCTV system in the customer premises. The individual understands the customer and site requirement, installs the camera and integrates the hardware for effective CCTV surveillance system functioning

Personal Attributes

The job requires the individual to have: ability to build interpersonal relationships, patience, listening skills and critical thinking. The individual must be willing to travel to client premises in order to install equipment at different locations.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

- [1. ELE/N4609: Visit Site and Understand Customer Requirement](#)
- [2. ELE/N4610: Install the CCTV Camera](#)
- [3. ELE/N4611: Setup the CCTV Surveillance System](#)
- [4. ELE/N9905: Work effectively at the workplace](#)
- [5. ELE/N1002: Apply health and safety practices at the workplace](#)
- [6. DGT/VSQ/N0102: Employability Skills \(60 Hours\)](#)

Qualification Pack (QP) Parameters

Sector	Electronics
Sub-Sector	Security Surveillance
Occupation	After Sales Support
Country	India
NSQF Level	4
Credits	20

Qualification Pack

Aligned to NCO/ISCO/ISIC Code	NCO-2004/NIL
Minimum Educational Qualification & Experience	8th grade pass with 2 years of NTC (plus 2 year NAC/relevant experience) OR 10th grade pass (plus 2 year of NTC/NAC/relevant experience) OR 12th grade Pass OR Certificate-NSQF (Level 3 in Maintenance Technician) with 2 Years of experience
Minimum Level of Education for Training in School	10th Class
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	NA
Next Review Date	27/01/2025
NSQC Approval Date	27/01/2022
Version	3.0
Reference code on NQR	2022/EHW/ESSC/06645
NQR Version	1.0

Remarks:

NA

Qualification Pack

ELE/N4609: Visit Site and Understand Customer Requirement

Description

This unit is about visiting and checking the site condition where the Closed-circuit television (CCTV) camera would be installed; deciding the system setup; and interacting with customer

Scope

The scope covers the following :

- Interacting with customer
- Understanding customer's requirements
- Understanding the site condition
- Suggesting solutions
- Deciding the CCTV system to be installed
- Achieving productivity and quality standards

Elements and Performance Criteria

Interacting with customer

To be competent, the user/individual on the job must be able to:

- PC1.** greet the customer and listen to their requirements
- PC2.** understand the basic requirement of the customer
- PC3.** understand the basic layout of site where the CCTV system is to be installed from the customer
- PC4.** check with customer about time for visit, field work and confirm location
- PC5.** follow etiquette when interacting with customers as per company policy

Understanding customer's requirements

To be competent, the user/individual on the job must be able to:

- PC6.** interact with the customer to understand the purpose of CCTV installation
- PC7.** understand the system monitoring requirement including combination of viewing, recording and replay
- PC8.** understand the type of camera preferred by customer such as fixed camera, pan/tilt, zoom options, day/night camera

Understanding the site condition

To be competent, the user/individual on the job must be able to:

- PC9.** visit the site and understand the layout
- PC10.** seek customers approval for visiting the rooms in the premises
- PC11.** understand the area and other measurement specifications
- PC12.** identify the locations where the CCTV camera to be installed which could capture maximum area in the video coverage
- PC13.** decide if any mounting structure or pole is required for camera installing
- PC14.** understand the building structure for cabling purpose



Qualification Pack

Suggesting solutions

To be competent, the user/individual on the job must be able to:

- PC15.** interact with customer to inform the observation made from surveillance aspect after the site check
- PC16.** suggest the CCTV systems that could fulfill customers and site requirement
- PC17.** suggest the type of camera and recording system to be installed
- PC18.** suggest the hardware / software requirements if it has to be connected with IP network or for remote monitoring
- PC19.** suggest the hardware system that suits the customer budget and meets the functional requirement
- PC20.** assess any hesitation from customer on selection of system and provide an alternative solution

Deciding the CCTV system to be installed

To be competent, the user/individual on the job must be able to:

- PC21.** confirm the number and type of camera to be installed as per the site requirement
- PC22.** take confirmation on mounting points of camera in the site
- PC23.** confirm the location of system placement (recorder and monitoring)
- PC24.** confirm the monitor or hardware requirement (TV / PC) and whether it is available
- PC25.** confirm the type of transmission to output device: IP network or Digital Video Recorder (DVR) or remote and confirm hardware requirements
- PC26.** estimate the time for installation process and inform the customer
- PC27.** inform the customer about hardware details including cost and take sign off

Achieving productivity and quality standards

To be competent, the user/individual on the job must be able to:

- PC28.** ask open and close-ended questions to understand the customer requirement and expectation about the CCTV system
- PC29.** educate about different systems and equipments available to meet customer requirements
- PC30.** achieve customer satisfaction on engagement behavior such as listening to complaints or appropriate dressing
- PC31.** educate customers about the different type of CCTV systems available in the market and suggest an ideal system for the site

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** companys policies on: customer care, warranties, products
- KU2.** companys code of conduct
- KU3.** organisation culture and typical customer profile
- KU4.** companys reporting structure
- KU5.** companys documentation policy
- KU6.** companys service level agreements and policies

Qualification Pack

- KU7.** CCTV camera installation requirement in terms of equipment, system , tools, applications appropriate for a particular site
- KU8.** preparation of field and site for camera installation
- KU9.** design criteria for CCTV camera installation
- KU10.** location criteria for CCTV camera installation
- KU11.** different types of CCTV equipments in the market, their specifications and prices
- KU12.** different types of CCTV camera and associated systems
- KU13.** different types of DVR and their purposes
- KU14.** tools and equipment to carry for installations
- KU15.** precautions to be taken while handling field calls and dealing with customers
- KU16.** relevant reference sheets, manuals and documents to carry in the field

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** how to read product and module serial numbers and interpret details such as make, date, availability
- GS2.** how to note problems on job sheet and details of work done
- GS3.** how to develop a rapport with customers
- GS4.** how to listen carefully and interpret their requirement
- GS5.** how to suggest customer on possible solutions
- GS6.** how to seek inputs at assess the problems
- GS7.** how to put the customer at ease and suggest solutions
- GS8.** how to communicate in local language
- GS9.** how to educate and inform customer about contractual issues such as warranty, cost of service and equipment replacement
- GS10.** how to educate on precautions to be taken post installations to avoid any mishaps
- GS11.** importance of personal grooming
- GS12.** significance of etiquette such as maintaining the appropriate physical distance with customer during conversation, not entering bedroom without permission
- GS13.** importance of being patient and courteous with all types of customers
- GS14.** being polite and courteous under all circumstances

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Interacting with customer</i>	5	8	-	-
PC1. greet the customer and listen to their requirements	1	1	-	-
PC2. understand the basic requirement of the customer	1	1	-	-
PC3. understand the basic layout of site where the CCTV system is to be installed from the customer	1	2	-	-
PC4. check with customer about time for visit, field work and confirm location	1	2	-	-
PC5. follow etiquette when interacting with customers as per company policy	1	2	-	-
<i>Understanding customer's requirements</i>	3	6	-	-
PC6. interact with the customer to understand the purpose of CCTV installation	1	2	-	-
PC7. understand the system monitoring requirement including combination of viewing, recording and replay	1	2	-	-
PC8. understand the type of camera preferred by customer such as fixed camera, pan/tilt, zoom options, day/night camera	1	2	-	-
<i>Understanding the site condition</i>	6	12	-	-
PC9. visit the site and understand the layout	1	2	-	-
PC10. seek customers approval for visiting the rooms in the premises	1	2	-	-
PC11. understand the area and other measurement specifications	1	2	-	-
PC12. identify the locations where the CCTV camera to be installed which could capture maximum area in the video coverage	1	2	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. decide if any mounting structure or pole is required for camera installing	1	2	-	-
PC14. understand the building structure for cabling purpose	1	2	-	-
<i>Suggesting solutions</i>	6	12	-	-
PC15. interact with customer to inform the observation made from surveillance aspect after the site check	1	2	-	-
PC16. suggest the CCTV systems that could fulfill customers and site requirement	1	2	-	-
PC17. suggest the type of camera and recording system to be installed	1	2	-	-
PC18. suggest the hardware / software requirements if it has to be connected with IP network or for remote monitoring	1	2	-	-
PC19. suggest the hardware system that suits the customer budget and meets the functional requirement	1	2	-	-
PC20. assess any hesitation from customer on selection of system and provide an alternative solution	1	2	-	-
<i>Deciding the CCTV system to be installed</i>	12	14	-	-
PC21. confirm the number and type of camera to be installed as per the site requirement	2	2	-	-
PC22. take confirmation on mounting points of camera in the site	1	2	-	-
PC23. confirm the location of system placement (recorder and monitoring)	2	2	-	-
PC24. confirm the monitor or hardware requirement (TV / PC) and whether it is available	2	2	-	-
PC25. confirm the type of transmission to output device: IP network or Digital Video Recorder (DVR) or remote and confirm hardware requirements	2	2	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC26. estimate the time for installation process and inform the customer	2	2	-	-
PC27. inform the customer about hardware details including cost and take sign off	1	2	-	-
<i>Achieving productivity and quality standards</i>	8	8	-	-
PC28. ask open and close-ended questions to understand the customer requirement and expectation about the CCTV system	2	2	-	-
PC29. educate about different systems and equipments available to meet customer requirements	2	2	-	-
PC30. achieve customer satisfaction on engagement behavior such as listening to complaints or appropriate dressing	2	2	-	-
PC31. educate customers about the different type of CCTV systems available in the market and suggest an ideal system for the site	2	2	-	-
NOS Total	40	60	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N4609
NOS Name	Visit Site and Understand Customer Requirement
Sector	Electronics
Sub-Sector	Security Surveillance
Occupation	After Sales Support
NSQF Level	4
Credits	TBD
Version	3.0
Last Reviewed Date	27/01/2022
Next Review Date	27/01/2025
NSQC Clearance Date	27/01/2022

Qualification Pack

ELE/N4610: Install the CCTV Camera

Description

This unit is about installing the CCTV camera at customers premises as per customers preference and connecting the camera to the system through cables

Scope

The scope covers the following :

- Procure CCTV hardware
- Testing hardware before installation
- Connecting cables
- Setup up the camera
- Using tools and equipments
- Complying to industry and quality standards
- Prepare for installation

Elements and Performance Criteria

Procuring CCTV hardware

To be competent, the user/individual on the job must be able to:

- PC1.** procure the hardware required for CCTV system installation
- PC2.** ensure that all the hardware matches the customer requirement, agreed features and specifications
- PC3.** understand the warranty associated with the hardware product
- PC4.** understand the related documents for the hardware equipments

Testing hardware before installation

To be competent, the user/individual on the job must be able to:

- PC5.** check the hardware equipments before taking to the installation site
- PC6.** replace the hardware if there is any issue or malfunction is found while testing
- PC7.** check for critical equipment such as camera, recorder w.r.t quality and output
- PC8.** ensure all the tools, equipments, utilities are available in good to enable installing in single visit

Connecting cables

To be competent, the user/individual on the job must be able to:

- PC9.** lay the cables in the building or site to connect the camera and system
- PC10.** ensure adequate length of co-axial and other cables are available for installation
- PC11.** use BNC connectors for joining cables and crimp them
- PC12.** use power cable of specified thickness to connect CCTV system with power supply
- PC13.** connect all the cables from multiple cameras to the CCTV system area

Setting up the camera

To be competent, the user/individual on the job must be able to:

Qualification Pack

- PC14.** mount the CCTV camera so as to cover maximum area
- PC15.** decide whether the camera requires any enclosure to protect from dust, vandalism and climatic conditions
- PC16.** use stable mounting structure and ensure that is not disturbed by wind or rain which would affect the video quality
- PC17.** decide on the height of camera installation according to the end purpose
- PC18.** set up the type of camera such as pan, tilt, zoom unit as per customer requirement
- PC19.** set camera controls
- PC20.** connect the power and video output cable to the camera

Using tools and equipments

To be competent, the user/individual on the job must be able to:

- PC21.** use tools such as diagonal cutters, screwdrivers, crimp tools, knife for cabling and camera mounting
- PC22.** follow standard operating procedure of tools and equipments and avoid any hazard
- PC23.** follow the installation manual for specific hardware product
- PC24.** use recommended tools for specific equipment to avoid damage
- PC25.** follow standard safety procedures while installing
- PC26.** ensure that only quality hardware products are procured

Complying to industry and quality standards

To be competent, the user/individual on the job must be able to:

- PC27.** ensure product installation and user manual is available which should be given to the customer
- PC28.** ensure that there are no cable joins, sharp bends during cabling
- PC29.** ensure weather proof (UV proof) cable are used in outdoors
- PC30.** ensure that cabling is sturdy, protected and does not disturb the ambience of building
- PC31.** ensure that cameras are protected from light while installing in outdoor
- PC32.** ensure the intended area is covered during movement in case of tilt or pan type of camera
- PC33.** assess power requirement of camera and use required power supply and cable
- PC34.** educate customer on use of cameras for desired monitoring and warranty period and annual maintenance requirement
- PC35.** ensure zero-material damage while handling the equipment during installation process
- PC36.** install target number of CCTVs as per companys policy

Prepare for installation

To be competent, the user/individual on the job must be able to:

- PC37.** identify and comply with the applicable provisions of legislative and organisational requirements relevant to installing CCTV equipment and audio systems
- PC38.** obtain, review and confirm assignment instructions with relevant persons as required
- PC39.** identify and control potential and existing risks and hazards in the work area in accordance with OHS requirements and own role, competence and authority

Knowledge and Understanding (KU)

Qualification Pack

The individual on the job needs to know and understand:

- KU1.** companys policies on: incentives, delivery standards, and personnel management
- KU2.** companys sales and after sales support policy
- KU3.** importance of the individuals role in the workflow
- KU4.** reporting structure
- KU5.** companys policy on products warranty and other terms and conditions
- KU6.** companys line of business and product portfolio
- KU7.** companys customer support and service policy
- KU8.** basic electronics involved in the hardware
- KU9.** basic electrical and wiring
- KU10.** carry out basic carpentry
- KU11.** carry out soldering and drilling
- KU12.** different types of electronic surveillance products and functionalities
- KU13.** functions of electrical and mechanical parts or modules
- KU14.** typical customer profile
- KU15.** elements of CCTV systems such as camera, DVR, monitor
- KU16.** companys portfolio of products and that of competitors
- KU17.** installation procedures given in the manuals
- KU18.** specification and the procedures to be followed for setting up the system
- KU19.** different type of cables used for data transmission and power transmission
- KU20.** power requirement of different CCTV related equipment
- KU21.** video recording of footage analog and digital
- KU22.** different types of camera available in the market
- KU23.** camera specifications such as focus, lens type, zoom
- KU24.** controls of different options in camera such as rotation, speed of movement in pan / tilt camera
- KU25.** voltage and power requirement for different hardware devices
- KU26.** how to operate the system and other hardware
- KU27.** safety rules, policies and procedures
- KU28.** quality standards to be followed

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** document the completed work
- GS2.** note the installation completed
- GS3.** read the standard operating procedures for different equipment
- GS4.** share work load as required
- GS5.** achieve the targets given on installations



Qualification Pack

- GS6.** operate hardware equipment in CCTV system
- GS7.** different types of cables that are required to integrate CCTV system
- GS8.** voltage requirement and other specification on CCTV hardware
- GS9.** operate tools such as diagonal cutter, screwdrivers, crimping tools for cabling and mounting of camera
- GS10.** understand earthing systems arrangements and requirements
- GS11.** access and store tools, equipment and materials
- GS12.** use other specific devices for installation of camera
- GS13.** improve work processes
- GS14.** reduce repetition of errors
- GS15.** spot process disruptions and delays
- GS16.** report on any customer concerns to superiors without delay

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Procuring CCTV hardware</i>	4	4	-	-
PC1. procure the hardware required for CCTV system installation	1	1	-	-
PC2. ensure that all the hardware matches the customer requirement, agreed features and specifications	1	1	-	-
PC3. understand the warranty associated with the hardware product	1	1	-	-
PC4. understand the related documents for the hardware equipments	1	1	-	-
<i>Testing hardware before installation</i>	4	6	-	-
PC5. check the hardware equipments before taking to the installation site	1	1	-	-
PC6. replace the hardware if there is any issue or malfunction is found while testing	1	2	-	-
PC7. check for critical equipment such as camera, recorder w.r.t quality and output	1	1	-	-
PC8. ensure all the tools, equipments, utilities are available in good to enable installing in single visit	1	2	-	-
<i>Connecting cables</i>	5	7	-	-
PC9. lay the cables in the building or site to connect the camera and system	1	1	-	-
PC10. ensure adequate length of co-axial and other cables are available for installation	1	2	-	-
PC11. use BNC connectors for joining cables and crimp them	1	1	-	-
PC12. use power cable of specified thickness to connect CCTV system with power supply	1	2	-	-
PC13. connect all the cables from multiple cameras to the CCTV system area	1	1	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Setting up the camera</i>	8	13	-	-
PC14. mount the CCTV camera so as to cover maximum area	1	2	-	-
PC15. decide whether the camera requires any enclosure to protect from dust, vandalism and climatic conditions	2	2	-	-
PC16. use stable mounting structure and ensure that is not disturbed by wind or rain which would affect the video quality	1	2	-	-
PC17. decide on the height of camera installation according to the end purpose	1	2	-	-
PC18. set up the type of camera such as pan, tilt, zoom unit as per customer requirement	1	2	-	-
PC19. set camera controls	1	2	-	-
PC20. connect the power and video output cable to the camera	1	1	-	-
<i>Using tools and equipments</i>	6	8	-	-
PC21. use tools such as diagonal cutters, screwdrivers, crimp tools, knife for cabling and camera mounting	1	2	-	-
PC22. follow standard operating procedure of tools and equipments and avoid any hazard	1	1	-	-
PC23. follow the installation manual for specific hardware product	1	1	-	-
PC24. use recommended tools for specific equipment to avoid damage	1	1	-	-
PC25. follow standard safety procedures while installing	1	1	-	-
PC26. ensure that only quality hardware products are procured	1	2	-	-
<i>Complying to industry and quality standards</i>	10	16	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC27. ensure product installation and user manual is available which should be given to the customer	1	2	-	-
PC28. ensure that there are no cable joins, sharp bends during cabling	1	1	-	-
PC29. ensure weather proof (UV proof) cable are used in outdoors	1	1	-	-
PC30. ensure that cabling is sturdy, protected and does not disturb the ambience of building	1	2	-	-
PC31. ensure that cameras are protected from light while installing in outdoor	1	2	-	-
PC32. ensure the intended area is covered during movement in case of tilt or pan type of camera	1	1	-	-
PC33. assess power requirement of camera and use required power supply and cable	1	1	-	-
PC34. educate customer on use of cameras for desired monitoring and warranty period and annual maintenance requirement	1	2	-	-
PC35. ensure zero-material damage while handling the equipment during installation process	1	2	-	-
PC36. install target number of CCTVs as per companys policy	1	2	-	-
<i>Prepare for installation</i>	3	6	-	-
PC37. identify and comply with the applicable provisions of legislative and organisational requirements relevant to installing CCTV equipment and audio systems	1	2	-	-
PC38. obtain, review and confirm assignment instructions with relevant persons as required	1	2	-	-
PC39. identify and control potential and existing risks and hazards in the work area in accordance with OHS requirements and own role, competence and authority	1	2	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	40	60	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N4610
NOS Name	Install the CCTV Camera
Sector	Electronics
Sub-Sector	Security Surveillance
Occupation	After Sales Support
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	27/01/2022
Next Review Date	19/07/2023
NSQC Clearance Date	19/01/2023

Qualification Pack

ELE/N4611: Setup the CCTV Surveillance System

Description

This unit is about connecting the CCTV camera to the recorder and setting up the CCTV monitoring system for viewing and recording images as per customers requirement.

Scope

The scope covers the following :

- Installing CCTV and audio systems
- Connecting CCTV camera and DVR with the system
- Setting up CCTV system
- Complete installation
- Check functioning of CCTV system
- Interact with customer
- Report to superior
- Achieving productivity and quality standards

Elements and Performance Criteria

Installing CCTV and audio systems

To be competent, the user/individual on the job must be able to:

- PC1.** select and use the personal protection equipment in accordance with Occupational Health and Safety (OHS) requirements
- PC2.** accurately position the CCTV equipment and audio system in accordance with installation specifications and assignment instructions
- PC3.** securely fix the CCTV equipment and audio system and connect to cabling using appropriate methods and procedures
- PC4.** ensure that CCTV equipment and audio system is installed without damage or distortion to the surrounding environment or services
- PC5.** ensure that safe workplace practices are applied throughout installation process in accordance with OHS requirements.
- PC6.** identify changing circumstances and factors affecting the achievement of assignment instructions
- PC7.** get the recommendations for changes to installation plans, if any, approved by relevant persons

Connecting CCTV camera and DVR with the system

To be competent, the user/individual on the job must be able to:

- PC8.** connect all the cameras installed to the DVR
- PC9.** ensure that all cameras are connected to the DVR and the wiring is appropriate
- PC10.** connect the monitor (TV / PC) with the video output connection in the DVR
- PC11.** connect speakers, if required, for audio output to DVR
- PC12.** connect the camera optional controls (tilt / pan / zoom) to DVR

Qualification Pack

PC13. use DVR link option to connect with other DVR in the network

PC14. connect the DVR to router, if required, to enable remote monitoring

Setting up CCTV system

To be competent, the user/individual on the job must be able to:

PC15. connect the power supply of DVR, monitor, speakers to set up the system

PC16. install the appropriate software for IP network or remote monitoring

PC17. enter the appropriate IP address to receive the video signals through IP network / internet

PC18. connect all equipments and switch on to start the video capture

Complete installation

To be competent, the user/individual on the job must be able to:

PC19. inspect and check the installed CCTV equipment and audio system to confirm operational effectiveness

PC20. conduct checks to confirm that all terminations are electrically and mechanically sound

PC21. restore the work area to original condition, dispose of waste and clean and store tools and equipment in accordance with organisational requirements

PC22. document any malfunctions, faults, wear or damage to tools or equipment, if any, and report for repair or replacement in accordance with organisational procedures

PC23. notify about completion of work to the customer in accordance with organisational procedures

Checking functioning of CCTV system

To be competent, the user/individual on the job must be able to:

PC24. perform a demo of CCTV system operation with the customer

PC25. ensure that all the controls in the system are properly working

PC26. ensure that pan, tilt, zoom options of the camera are working

PC27. monitor and switch to multiple camera installed and connected in the system

PC28. perform viewing, recording and replaying the video captured in the system as per customer requirement

PC29. take corrective action and fix the issues such as no video, lack of clarity in the system when found

PC30. perform remote monitoring and controls associated if it is opted by customer

Interacting with customer

To be competent, the user/individual on the job must be able to:

PC31. inform customer on adequate information about hardware device or software

PC32. instruct customer on use of and procedures to be followed for operating the system or hardware

Reporting to superior

To be competent, the user/individual on the job must be able to:

PC33. receive the work order from the superior

PC34. report on the work load and completion status

PC35. escalate the problems that cannot be resolved at field level with reason

PC36. submit the feedback form on customer satisfaction level with respect to the installation

PC37. accurately report work status through proper documentation as per companys standards



Qualification Pack

Achieving productivity and quality standards

To be competent, the user/individual on the job must be able to:

- PC38.** ensure that there is no problem after installing the CCTV system and the output video is per customers expectation
- PC39.** confirm acceptance on installing any hardware or software in the system
- PC40.** inform customer about warranty and other terms and conditions on the hardware equipment
- PC41.** provide relevant documents to customers on completion of installation
- PC42.** achieve 100% satisfaction with customer on installation service
- PC43.** achieve 100% on time completion of field installation with reference to agreed target and time or reasons for not meeting target

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** companys policies on: incentives, delivery standards, and personnel management
- KU2.** companys sales and after sales support policy
- KU3.** importance of the individuals role in the workflow
- KU4.** reporting structure
- KU5.** companys policy on products warranty and other terms and conditions
- KU6.** companys line of business and product portfolio
- KU7.** different types of electronic surveillance products and functionalities
- KU8.** functions of electrical and mechanical parts/ modules
- KU9.** specification and the procedures to be followed for setting up the system
- KU10.** different type of cables used for data transmission and power transmission
- KU11.** power requirement of different CCTV related equipment
- KU12.** video recording of footage analog and digital
- KU13.** different types of camera available in the market
- KU14.** camera specifications such as focus, lens type, zoom
- KU15.** controls of different options in camera such as rotation, speed of movement in pan / tilt camera
- KU16.** voltage and power requirement for different hardware devices
- KU17.** integration of hardware to setup the system
- KU18.** parameters and specification for different types of system integration
- KU19.** accessing image from remote locations
- KU20.** CCTV monitoring and control over IP network / Internet
- KU21.** IP technology and networking principles
- KU22.** basics of networking
- KU23.** video recording technologies
- KU24.** controls in digital video recorder and their usage
- KU25.** how to operate the system and other hardware

Qualification Pack

- KU26.** procedures for reporting malfunctioning or faulty tools and equipment
- KU27.** requirements for working at height and in a confined space
- KU28.** risks and hazards associated with installation procedures
- KU29.** waste disposal procedures
- KU30.** safety rules, policies and procedures
- KU31.** quality standards to be followed

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read job sheet and/or complaints registered at customer care
- GS2.** document the completed work
- GS3.** note customer complaints and solution provided
- GS4.** note customer complaints and solution provided
- GS5.** share work load as required
- GS6.** achieve the target
- GS7.** operate computer and laptop
- GS8.** operate CCTV related hardware equipments , their controls and specifications
- GS9.** complete operational controls in Digital Video Recorder (DVR)
- GS10.** networking and software involved set up CCTV system in a network
- GS11.** configure different settings and installations of hardware and software as per customer requirement
- GS12.** operate tools such as diagonal cutter, screwdrivers, crimping tools for cabling and mounting of camera
- GS13.** use other specific devices for installation of camera
- GS14.** use tools for integrating the systems
- GS15.** improve work processes
- GS16.** use personal protection equipment and clothing
- GS17.** test and confirm operational effectiveness of CCTV equipment and audio system
- GS18.** restore work area to pre-installation condition
- GS19.** work at heights and in confined spaces
- GS20.** reduce errors on field and repeat trips
- GS21.** spot process disruptions and delays
- GS22.** report on any issues raised by customers to superiors without delay

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Installing CCTV and audio systems</i>	7	10	-	-
PC1. select and use the personal protection equipment in accordance with Occupational Health and Safety (OHS) requirements	1	1	-	-
PC2. accurately position the CCTV equipment and audio system in accordance with installation specifications and assignment instructions	1	2	-	-
PC3. securely fix the CCTV equipment and audio system and connect to cabling using appropriate methods and procedures	1	2	-	-
PC4. ensure that CCTV equipment and audio system is installed without damage or distortion to the surrounding environment or services	1	1	-	-
PC5. ensure that safe workplace practices are applied throughout installation process in accordance with OHS requirements.	1	2	-	-
PC6. identify changing circumstances and factors affecting the achievement of assignment instructions	1	1	-	-
PC7. get the recommendations for changes to installation plans, if any, approved by relevant persons	1	1	-	-
<i>Connecting CCTV camera and DVR with the system</i>	6	8	-	-
PC8. connect all the cameras installed to the DVR	-	1	-	-
PC9. ensure that all cameras are connected to the DVR and the wiring is appropriate	1	2	-	-
PC10. connect the monitor (TV / PC) with the video output connection in the DVR	1	1	-	-
PC11. connect speakers, if required, for audio output to DVR	1	1	-	-
PC12. connect the camera optional controls (tilt / pan / zoom) to DVR	1	1	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. use DVR link option to connect with other DVR in the network	1	1	-	-
PC14. connect the DVR to router, if required, to enable remote monitoring	1	1	-	-
<i>Setting up CCTV system</i>	4	6	-	-
PC15. connect the power supply of DVR, monitor, speakers to set up the system	1	1	-	-
PC16. install the appropriate software for IP network or remote monitoring	1	2	-	-
PC17. enter the appropriate IP address to receive the video signals through IP network / internet	1	2	-	-
PC18. connect all equipments and switch on to start the video capture	1	1	-	-
<i>Complete installation</i>	5	8	-	-
PC19. inspect and check the installed CCTV equipment and audio system to confirm operational effectiveness	1	1	-	-
PC20. conduct checks to confirm that all terminations are electrically and mechanically sound	1	1	-	-
PC21. restore the work area to original condition, dispose of waste and clean and store tools and equipment in accordance with organisational requirements	1	2	-	-
PC22. document any malfunctions, faults, wear or damage to tools or equipment, if any, and report for repair or replacement in accordance with organisational procedures	1	2	-	-
PC23. notify about completion of work to the customer in accordance with organisational procedures	1	2	-	-
<i>Checking functioning of CCTV system</i>	7	10	-	-
PC24. perform a demo of CCTV system operation with the customer	1	1	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC25. ensure that all the controls in the system are properly working	1	1	-	-
PC26. ensure that pan, tilt, zoom options of the camera are working	1	1	-	-
PC27. monitor and switch to multiple camera installed and connected in the system	1	2	-	-
PC28. perform viewing, recording and replaying the video captured in the system as per customer requirement	1	2	-	-
PC29. take corrective action and fix the issues such as no video, lack of clarity in the system when found	1	2	-	-
PC30. perform remote monitoring and controls associated if it is opted by customer	1	1	-	-
<i>Interacting with customer</i>	2	4	-	-
PC31. inform customer on adequate information about hardware device or software	1	2	-	-
PC32. instruct customer on use of and procedures to be followed for operating the system or hardware	1	2	-	-
<i>Reporting to superior</i>	3	8	-	-
PC33. receive the work order from the superior	-	1	-	-
PC34. report on the work load and completion status	-	1	-	-
PC35. escalate the problems that cannot be resolved at field level with reason	1	2	-	-
PC36. submit the feedback form on customer satisfaction level with respect to the installation	1	2	-	-
PC37. accurately report work status through proper documentation as per companys standards	1	2	-	-
<i>Achieving productivity and quality standards</i>	6	6	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC38. ensure that there is no problem after installing the CCTV system and the output video is per customers expectation	1	1	-	-
PC39. confirm acceptance on installing any hardware or software in the system	1	1	-	-
PC40. inform customer about warranty and other terms and conditions on the hardware equipment	1	1	-	-
PC41. provide relevant documents to customers on completion of installation	1	1	-	-
PC42. achieve 100% satisfaction with customer on installation service	1	1	-	-
PC43. achieve 100% on time completion of field installation with reference to agreed target and time or reasons for not meeting target	1	1	-	-
NOS Total	40	60	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N4611
NOS Name	Setup the CCTV Surveillance System
Sector	Electronics
Sub-Sector	Security Surveillance
Occupation	After Sales Service
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	27/01/2022
Next Review Date	19/07/2023
NSQF Clearance Date	19/01/2023

Qualification Pack

ELE/N9905: Work effectively at the workplace

Description

This unit is about the communicating and managing work effectively at the workplace as well as taking measures to enhance own competence and working in a disciplined and ethical manner.

Scope

The scope covers the following :

- Communicate effectively at the workplace
- Work effectively
- Maintain and enhance professional competence
- Work in a disciplined and ethical manner
- Uphold social diversity at the workplace

Elements and Performance Criteria

Communicate effectively at the workplace

To be competent, the user/individual on the job must be able to:

- PC1.** exchange information and instruction with colleagues, and seek clarifications and feedback as necessary
- PC2.** assist colleagues where required
- PC3.** follow business communication etiquette in all interactions and communicative formats (online, digital, and in-person)
- PC4.** document and share all relevant information with stakeholders in agreed formats and as per agreed timelines

Work effectively

To be competent, the user/individual on the job must be able to:

- PC5.** identify and obtain clarity regarding organisational, team and own goals and targets
- PC6.** prioritise and plan work in order to achieve goals and targets
- PC7.** monitor own and team performance as per agreed plan
- PC8.** complete duties accurately, systematically and within required timeframes
- PC9.** express emotions appropriately at the workplace and manage own response to heightened emotions
- PC10.** maintain orderliness and cleanliness in the work area

Maintain and enhance professional competence

To be competent, the user/individual on the job must be able to:

- PC11.** identify own strengths and weaknesses in relation to goals and targets
- PC12.** adapt self, service, or product to meet success criteria
- PC13.** seek and select opportunities for continuous professional development
- PC14.** formulate a professional development plan to enhance capabilities

Qualification Pack

- PC15.** build or contribute to the organizational knowledge base of cases, clients, issues, solutions, and innovations
- PC16.** examine developments and trends in field of work and their potential impact on work
- PC17.** take feedback from peers, supervisors and clients to improve own performance and practices

Work in a disciplined and ethical manner

To be competent, the user/individual on the job must be able to:

- PC18.** perform tasks as per workplace standards, organisational policies and legislative requirements
- PC19.** display appropriate professional appearance at the workplace and adhere to the organisational dress code
- PC20.** demonstrate responsible and disciplined behaviour at the workplace such as punctuality; completing tasks as per given time and standards; demonstrating professional behaviour at all times, adopting environment- friendly practices, etc.
- PC21.** identify the cause of conflict and options for resolution with peers or escalate grievances and problems to appropriate authority as per procedure for conflict resolution
- PC22.** protect the rights of the client and organisation when delivering services
- PC23.** ensure services are delivered equally to all clients regardless of personal and cultural beliefs
- PC24.** operate within an agreed ethical code of practice and report unethical conduct to the appropriate authorities
- PC25.** follow organisational guidelines and legal requirements on disclosure and confidentiality

Uphold social diversity at the workplace

To be competent, the user/individual on the job must be able to:

- PC26.** recognize and evaluate biased practices against underrepresented groups like women and persons with disabilities, in workplace systems and processes
- PC27.** identify and report discrimination and harassment based on gender, disability, or cultural difference at the workplace
- PC28.** use inclusive or neutral language and gestures in all interactions
- PC29.** respect the personal and professional space of others
- PC30.** access grievance redressal mechanisms as per legislations

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** organisation's policies on dress code, workplace timings, workplace behaviour, performance management, incentives, delivery standards, information security, etc.
- KU2.** organizational hierarchy and escalation matrix
- KU3.** importance of the individual's role in the workflow
- KU4.** organisational norms on health, safety and sustainability
- KU5.** work area inspection procedures and practices
- KU6.** professional etiquette and grooming



Qualification Pack

- KU7.** communication etiquette across communicative mediums (online, digital, and in-person) including strategies/methods for sharing information, documentation, and providing and receiving feedback
- KU8.** importance of self-evaluations and developing a continuous learning and professional development plan
- KU9.** developments and trends impacting professional practice
- KU10.** importance of taking and using feedback from colleagues and clients to identify and introduce improvements in work performance
- KU11.** professional ethics and workplace norms on reporting and/or penalizing unethical behaviour and practices.
- KU12.** guidelines and legal requirements on disclosure, confidentiality, and conflicts of interest
- KU13.** strategies for collaboration with colleagues and clients.
- KU14.** professional responses and strategies against inappropriate language or behaviour toward self and others
- KU15.** Implicit bias (based on gender, disability, class, caste, colour, race, culture, religion, etc.) and its consequences in the workplace
- KU16.** organizational guidelines, prevalent legislations and accessibility norms and processes to support PwDs at the workplace
- KU17.** strategies for time, effort and resource allocation towards the goals.
- KU18.** basic concepts of work productivity including waste reduction, efficient material usage and optimization of time

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** complete documentation and forms such as work orders, invoices maintenance records activity logs, attendance sheets as per organizational format in English and/or local language
- GS2.** write basic accident or incident report accurately in an appropriate format
- GS3.** read warnings, instructions and other text material on product labels, components, etc. and relevant signages, warnings, labels or descriptions on equipment, etc. while carrying out work activities
- GS4.** convey and share technical information clearly using appropriate language
- GS5.** clarify task-related information
- GS6.** liaise with authorities and supervisors as per organizational protocol
- GS7.** listen, speak, and write in an inclusive, respectful manner in line with organizational protocol
- GS8.** seek clarification from immediate supervisor or responsible authority or exercise most appropriate solutions to safety breaches at work
- GS9.** report to the supervisor and when to deal with a colleague depending on the type of concern
- GS10.** deliver product to next work process on time
- GS11.** improve work process and report potential areas of delays and disruptions
- GS12.** communicate problems appropriately to others
- GS13.** identify symptoms of the fault to the cause of the problem and resolve, otherwise seek assistance and support from other sources to solve the problem



Qualification Pack

- GS14.** anticipate and avoid hazards that may occur during repairs because of tools, materials used or repair processes
- GS15.** complete tasks efficiently and accurately within stipulated time
- GS16.** appreciate and respect social diversity in all professional settings
- GS17.** develop awareness and accountability for perspectives on gender, disabilities, and socio-cultural issues leading to discrimination, bias, or harassment at the workplace
- GS18.** maintain positive and effective relationships with colleagues and customers

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Communicate effectively at the workplace</i>	5	13	-	-
PC1. exchange information and instruction with colleagues, and seek clarifications and feedback as necessary	1	3	-	-
PC2. assist colleagues where required	1	3	-	-
PC3. follow business communication etiquette in all interactions and communicative formats (online, digital, and in-person)	1	4	-	-
PC4. document and share all relevant information with stakeholders in agreed formats and as per agreed timelines	2	3	-	-
<i>Work effectively</i>	6	13	-	-
PC5. identify and obtain clarity regarding organisational, team and own goals and targets	1	2	-	-
PC6. prioritise and plan work in order to achieve goals and targets	1	2	-	-
PC7. monitor own and team performance as per agreed plan	1	2	-	-
PC8. complete duties accurately, systematically and within required timeframes	1	2	-	-
PC9. express emotions appropriately at the workplace and manage own response to heightened emotions	1	2	-	-
PC10. maintain orderliness and cleanliness in the work area	1	3	-	-
<i>Maintain and enhance professional competence</i>	8	7	-	-
PC11. identify own strengths and weaknesses in relation to goals and targets	1	1	-	-
PC12. adapt self, service, or product to meet success criteria	1	1	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. seek and select opportunities for continuous professional development	1	1	-	-
PC14. formulate a professional development plan to enhance capabilities	2	1	-	-
PC15. build or contribute to the organizational knowledge base of cases, clients, issues, solutions, and innovations	1	1	-	-
PC16. examine developments and trends in field of work and their potential impact on work	1	1	-	-
PC17. take feedback from peers, supervisors and clients to improve own performance and practices	1	1	-	-
<i>Work in a disciplined and ethical manner</i>	11	16	-	-
PC18. perform tasks as per workplace standards, organisational policies and legislative requirements	2	2	-	-
PC19. display appropriate professional appearance at the workplace and adhere to the organisational dress code	1	2	-	-
PC20. demonstrate responsible and disciplined behaviour at the workplace such as punctuality; completing tasks as per given time and standards; demonstrating professional behaviour at all times, adopting environment- friendly practices, etc.	1	2	-	-
PC21. identify the cause of conflict and options for resolution with peers or escalate grievances and problems to appropriate authority as per procedure for conflict resolution	2	2	-	-
PC22. protect the rights of the client and organisation when delivering services	1	2	-	-
PC23. ensure services are delivered equally to all clients regardless of personal and cultural beliefs	1	2	-	-
PC24. operate within an agreed ethical code of practice and report unethical conduct to the appropriate authorities	2	2	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC25. follow organisational guidelines and legal requirements on disclosure and confidentiality	1	2	-	-
<i>Uphold social diversity at the workplace</i>	10	11	-	-
PC26. recognize and evaluate biased practices against underrepresented groups like women and persons with disabilities, in workplace systems and processes	2	2	-	-
PC27. identify and report discrimination and harassment based on gender, disability, or cultural difference at the workplace	2	2	-	-
PC28. use inclusive or neutral language and gestures in all interactions	2	2	-	-
PC29. respect the personal and professional space of others	2	2	-	-
PC30. access grievance redressal mechanisms as per legislations	2	3	-	-
NOS Total	40	60	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N9905
NOS Name	Work effectively at the workplace
Sector	Electronics
Sub-Sector	Generic
Occupation	Generic - Organizational Behaviour
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	24/02/2022
Next Review Date	30/12/2026
NSQF Clearance Date	30/12/2021

Qualification Pack

ELE/N1002: Apply health and safety practices at the workplace

Description

This OS unit is about knowledge and practices relating to health, safety and security that candidates need to use in the workplace.

Scope

The scope covers the following :

- Deal with workplace hazards
- Apply fire safety practices
- Follow emergencies, rescue and first-aid procedures
- Effective waste management/recycling practices

Elements and Performance Criteria

Deal with workplace hazards

To be competent, the user/individual on the job must be able to:

- PC1.** identify job-site hazards and possible causes of accident in the workplace
- PC2.** perform work complying to organizational safe working practices and observing hazard signs displayed on containers, equipment and in various work areas such as inside buildings, in open areas and public spaces, etc.
- PC3.** use appropriate personal protective equipment (PPE) for specific tasks and work conditions, contaminant (concentration w.r.t air) requirements and severity of hazard while conforming to the Indian/International standards
- PC4.** follow standard safety procedures while handling tool/ ,equipment, hazardous substances and while working in hazardous environments
- PC5.** dispose electronic waste (such as toxins; metals such as lead, cadmium, barium; flame retardant plastics, welding slag etc.) as per industry approved techniques
- PC6.** avoid damage of components due to negligence in electrostatic discharge (ESD) procedures
- PC7.** locate general health and safety equipment in the workplace such as fire extinguishers; first aid equipment; safety instruments, clothing and installations (fire exits, exhaust fans)
- PC8.** maintain appropriate posture while handling heavy objects
- PC9.** apply good housekeeping practices at all times

Apply fire safety practices

To be competent, the user/individual on the job must be able to:

- PC10.** take preventive measures to prevent fire hazards
- PC11.**
 - use appropriate fire extinguishers for different types of fires
 - Types of fires: Class A: e.g. ordinary solid combustibles, such as wood, paper, cloth, plastic, charcoal, etc.; Class B: flammable liquids and gases, such as gasoline, propane, diesel fuel, tar, cooking oil, and similar substances; Class C: e.g. electrical equipment such as appliances, wiring, breaker panels, etc. (These categories of fires become Class A, B, and D fires when the electrical equipment that initiated the fire is no l
- PC12.** exhibit rescue and first-aid techniques in case of fire or electrocution

Qualification Pack

Follow emergencies, rescue and first-aid procedures

To be competent, the user/individual on the job must be able to:

- PC13.** administer appropriate first aid to victims in case of bleeding, burns, choking, electric shock, poisoning etc.
- PC14.** administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock,
- PC15.** participate regularly in emergency procedures such as raising alarm, safe/efficient, evacuation, correct means of taking shelter and escaping, correct assembly point, roll call, correct return to work
- PC16.** use correct method to move injured people and others during an emergency

Effective waste management/recycling practices

To be competent, the user/individual on the job must be able to:

- PC17.** identify recyclable and non-recyclable, and hazardous waste generated
- PC18.** segregate waste into different categories
- PC19.** ensure disposal of non-recyclable waste appropriately
- PC20.** deposit non-recyclable and reusable material at identified location
- PC21.** follow processes specified for disposal of hazardous waste

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** importance of working in clean and safe work environment following safety practices and procedures
- KU2.** health and safety roles and responsibilities of relevant personnel within and outside the organisation
- KU3.** key internal and external sources of health and safety information
- KU4.** basic knowledge of electronic devices and related health risks
- KU5.** meaning of hazards and risks
- KU6.** various types of health and safety hazards commonly present in the work environment such as physical hazards, electrical hazards, chemical hazards, fire hazards, equipment related hazards, health hazards, etc.
- KU7.** methods of accident prevention
- KU8.** importance of using protective clothing/equipment while working
- KU9.** general principles for identifying and controlling health and safety risks
- KU10.** main hazards and preventive as well as control measures while working with different types of equipment
- KU11.** importance of carrying out electrical and non-electrical isolation to prevent hazards from loss of machine/system/process control
- KU12.** main hazards and preventive as well as control measures when working with electrical systems or using electrical equipment
- KU13.** forms and classifications of hazardous substances
- KU14.** safe working practices while working at various hazardous sites
- KU15.** prevention and control measures to reduce risks from exposure to hazardous substances

Qualification Pack

- KU16.** health effects associated with exposure to noise and vibration and the appropriate control measures
- KU17.** precautionary activities to prevent the fire accident
- KU18.** various causes of fire such as heating of metal, spontaneous ignition, sparking, electrical eating, loose fires (smoking, welding, etc.) chemical fires etc.
- KU19.** techniques of using the different fire extinguishers
- KU20.** different methods and material to extinguish fires
- KU21.** different materials used for extinguishing fire such as sand, water, foam, CO₂, dry powder
- KU22.** rescue techniques used during a fire hazard
- KU23.** various types of safety signs and their meaning
- KU24.** basic first aid treatment relevant to the common work place injuries e.g. shock, electrical shock, bleeding, breaks to bones, minor burns, resuscitation, poisoning, eye injuries
- KU25.** contents of written accident report
- KU26.** potential injuries and ill health associated with incorrect handling of tools and equipment
- KU27.** safe lifting and carrying practices
- KU28.** potential impact to a person who is moved incorrectly
- KU29.** personal safety, health and dignity issues relating to the movement of a person by others
- KU30.** ESD measures and 5S
- KU31.** efficient utilization and management of material and water
- KU32.** ways to recognize common electrical problems and practices of conserving electricity
- KU33.** usage of different colours of dustbins, categorization of waste into dry, wet, recyclable, nonrecyclable and items of single-use plastics
- KU34.** organization's procedure for minimizing waste
- KU35.** waste management and methods of waste disposal
- KU36.** common sources of pollution and ways to minimize it
- KU37.** names, contact information and location of people responsible for health and safety in the workplace
- KU38.** location of documents and equipment for health and safety compliance/practices in the workplace
- KU39.** safety notices, signs and instructions at workplace

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** interpret general health and safety guidelines labels, charts, signages
- GS2.** read operation manuals
- GS3.** write health and safety compliance report
- GS4.** write an accident/incident report in local language or English
- GS5.** provide an emergency or safety incident brief to seniors or relevant authorities in a calm, clear and to-the-point manner
- GS6.** communicate general health and safety guidelines to colleagues/co-workers



Qualification Pack

- GS7.** communicate appropriately with co-workers in order to clarify instructions and other issues
- GS8.** act in case of any potential hazards observed in the work place
- GS9.** plan and organize their own work schedule, work area, tools, equipment in compliance with organizational policies for health, safety and security
- GS10.** take adequate measures to ensure the safety of clients and visitors at the workplace
- GS11.** identify immediate or temporary solutions to resolve delays
- GS12.** evaluate the work area for health and safety risks or hazards
- GS13.** use cause and effect relations to anticipate potential issues, problems and their solution in the work area related to safety
- GS14.** recognise emergency and potential emergency situations
- GS15.** protect self and others from a health and safety risk or hazard
- GS16.** communicate and collaborate to incorporate sustainable practices (greening) in workplace processes
- GS17.** record data on waste disposal at workplace

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Deal with workplace hazards</i>	20	31	-	-
PC1. identify job-site hazards and possible causes of accident in the workplace	2	3	-	-
PC2. perform work complying to organizational safe working practices and observing hazard signs displayed on containers, equipment and in various work areas such as inside buildings, in open areas and public spaces, etc.	3	4	-	-
PC3. use appropriate personal protective equipment (PPE) for specific tasks and work conditions, contaminant (concentration w.r.t air) requirements and severity of hazard while conforming to the Indian/International standards	3	4	-	-
PC4. follow standard safety procedures while handling tool/ ,equipment, hazardous substances and while working in hazardous environments	3	4	-	-
PC5. dispose electronic waste (such as toxins; metals such as lead, cadmium, barium; flame retardant plastics, welding slag etc.) as per industry approved techniques	2	4	-	-
PC6. avoid damage of components due to negligence in electrostatic discharge (ESD) procedures	2	3	-	-
PC7. locate general health and safety equipment in the workplace such as fire extinguishers; first aid equipment; safety instruments, clothing and installations (fire exits, exhaust fans)	2	3	-	-
PC8. maintain appropriate posture while handling heavy objects	1	3	-	-
PC9. apply good housekeeping practices at all times	2	3	-	-
<i>Apply fire safety practices</i>	4	9	-	-
PC10. take preventive measures to prevent fire hazards	2	3	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<p>PC11.</p> <ul style="list-style-type: none"> • use appropriate fire extinguishers for different types of fires • Types of fires: Class A: e.g. ordinary solid combustibles, such as wood, paper, cloth, plastic, charcoal, etc.; Class B: flammable liquids and gases, such as gasoline, propane, diesel fuel, tar, cooking oil, and similar substances; Class C: e.g. electrical equipment such as appliances, wiring, breaker panels, etc. (These categories of fires become Class A, B, and D fires when the electrical equipment that initiated the fire is no l 	1	3	-	-
<p>PC12. exhibit rescue and first-aid techniques in case of fire or electrocution</p>	1	3	-	-
<p><i>Follow emergencies, rescue and first-aid procedures</i></p>	6	13	-	-
<p>PC13. administer appropriate first aid to victims in case of bleeding, burns, choking, electric shock, poisoning etc.</p>	1	3	-	-
<p>PC14. administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock,</p>	1	2	-	-
<p>PC15. participate regularly in emergency procedures such as raising alarm, safe/efficient, evacuation, correct means of taking shelter and escaping, correct assembly point, roll call, correct return to work</p>	2	4	-	-
<p>PC16. use correct method to move injured people and others during an emergency</p>	2	4	-	-
<p><i>Effective waste management/recycling practices</i></p>	5	12	-	-
<p>PC17. identify recyclable and non-recyclable, and hazardous waste generated</p>	1	3	-	-
<p>PC18. segregate waste into different categories</p>	1	2	-	-
<p>PC19. ensure disposal of non-recyclable waste appropriately</p>	1	2	-	-
<p>PC20. deposit non-recyclable and reusable material at identified location</p>	1	3	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC21. follow processes specified for disposal of hazardous waste	1	2	-	-
NOS Total	35	65	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N1002
NOS Name	Apply health and safety practices at the workplace
Sector	Electronics
Sub-Sector	Generic
Occupation	Generic - Health Safety
NSQF Level	4
Credits	TBD
Version	3.0
Last Reviewed Date	24/02/2022
Next Review Date	30/12/2026
NSQC Clearance Date	30/12/2021



Qualification Pack

DGT/VSQ/N0102: Employability Skills (60 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Career Development & Goal Setting
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

To be competent, the user/individual on the job must be able to:

- PC1.** identify employability skills required for jobs in various industries
- PC2.** identify and explore learning and employability portals

Constitutional values - Citizenship

To be competent, the user/individual on the job must be able to:

- PC3.** recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.
- PC4.** follow environmentally sustainable practices

Becoming a Professional in the 21st Century

To be competent, the user/individual on the job must be able to:

- PC5.** recognize the significance of 21st Century Skills for employment
- PC6.** practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life

Basic English Skills

To be competent, the user/individual on the job must be able to:

Qualification Pack

- PC7.** use basic English for everyday conversation in different contexts, in person and over the telephone
- PC8.** read and understand routine information, notes, instructions, mails, letters etc. written in English
- PC9.** write short messages, notes, letters, e-mails etc. in English

Career Development & Goal Setting

To be competent, the user/individual on the job must be able to:

- PC10.** understand the difference between job and career
- PC11.** prepare a career development plan with short- and long-term goals, based on aptitude

Communication Skills

To be competent, the user/individual on the job must be able to:

- PC12.** follow verbal and non-verbal communication etiquette and active listening techniques in various settings
- PC13.** work collaboratively with others in a team

Diversity & Inclusion

To be competent, the user/individual on the job must be able to:

- PC14.** communicate and behave appropriately with all genders and PwD
- PC15.** escalate any issues related to sexual harassment at workplace according to POSH Act

Financial and Legal Literacy

To be competent, the user/individual on the job must be able to:

- PC16.** select financial institutions, products and services as per requirement
- PC17.** carry out offline and online financial transactions, safely and securely
- PC18.** identify common components of salary and compute income, expenses, taxes, investments etc
- PC19.** identify relevant rights and laws and use legal aids to fight against legal exploitation

Essential Digital Skills

To be competent, the user/individual on the job must be able to:

- PC20.** operate digital devices and carry out basic internet operations securely and safely
- PC21.** use e- mail and social media platforms and virtual collaboration tools to work effectively
- PC22.** use basic features of word processor, spreadsheets, and presentations

Entrepreneurship

To be competent, the user/individual on the job must be able to:

- PC23.** identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research
- PC24.** develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion
- PC25.** identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity

Customer Service

To be competent, the user/individual on the job must be able to:

- PC26.** identify different types of customers
- PC27.** identify and respond to customer requests and needs in a professional manner.

Qualification Pack

PC28. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

To be competent, the user/individual on the job must be able to:

PC29. create a professional Curriculum vitae (Résumé)

PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively

PC31. apply to identified job openings using offline /online methods as per requirement

PC32. answer questions politely, with clarity and confidence, during recruitment and selection

PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills and different learning and employability related portals

KU2. various constitutional and personal values

KU3. different environmentally sustainable practices and their importance

KU4. Twenty first (21st) century skills and their importance

KU5. how to use English language for effective verbal (face to face and telephonic) and written communication in formal and informal set up

KU6. importance of career development and setting long- and short-term goals

KU7. about effective communication

KU8. POSH Act

KU9. Gender sensitivity and inclusivity

KU10. different types of financial institutes, products, and services

KU11. how to compute income and expenditure

KU12. importance of maintaining safety and security in offline and online financial transactions

KU13. different legal rights and laws

KU14. different types of digital devices and the procedure to operate them safely and securely

KU15. how to create and operate an e- mail account and use applications such as word processors, spreadsheets etc.

KU16. how to identify business opportunities

KU17. types and needs of customers

KU18. how to apply for a job and prepare for an interview

KU19. apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. read and write different types of documents/instructions/correspondence

GS2. communicate effectively using appropriate language in formal and informal settings



Qualification Pack

- GS3.** behave politely and appropriately with all
- GS4.** how to work in a virtual mode
- GS5.** perform calculations efficiently
- GS6.** solve problems effectively
- GS7.** pay attention to details
- GS8.** manage time efficiently
- GS9.** maintain hygiene and sanitization to avoid infection

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	1	1	-	-
PC1. identify employability skills required for jobs in various industries	-	-	-	-
PC2. identify and explore learning and employability portals	-	-	-	-
<i>Constitutional values - Citizenship</i>	1	1	-	-
PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
PC4. follow environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	2	4	-	-
PC5. recognize the significance of 21st Century Skills for employment	-	-	-	-
PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
<i>Basic English Skills</i>	2	3	-	-
PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-
PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC9. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
<i>Career Development & Goal Setting</i>	1	2	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. understand the difference between job and career	-	-	-	-
PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
<i>Communication Skills</i>	2	2	-	-
PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC13. work collaboratively with others in a team	-	-	-	-
<i>Diversity & Inclusion</i>	1	2	-	-
PC14. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC15. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
<i>Financial and Legal Literacy</i>	2	3	-	-
PC16. select financial institutions, products and services as per requirement	-	-	-	-
PC17. carry out offline and online financial transactions, safely and securely	-	-	-	-
PC18. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
<i>Essential Digital Skills</i>	3	4	-	-
PC20. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC22. use basic features of word processor, spreadsheets, and presentations	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Entrepreneurship</i>	2	3	-	-
PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
<i>Customer Service</i>	1	2	-	-
PC26. identify different types of customers	-	-	-	-
PC27. identify and respond to customer requests and needs in a professional manner.	-	-	-	-
PC28. follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	2	3	-	-
PC29. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC31. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
PC32. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
NOS Total	20	30	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0102
NOS Name	Employability Skills (60 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	NA
Next Review Date	24/02/2025
NSQC Clearance Date	24/02/2022

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre based on this criterion.
6. To pass the Qualification Pack, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Qualification Pack

Minimum Aggregate Passing % at QP Level : 70

(Please note: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
ELE/N4609.Visit Site and Understand Customer Requirement	40	60	-	-	100	20
ELE/N4610.Install the CCTV Camera	40	60	-	-	100	25
ELE/N4611.Setup the CCTV Surveillance System	40	60	-	-	100	25
ELE/N9905.Work effectively at the workplace	40	60	-	-	100	10
ELE/N1002.Apply health and safety practices at the workplace	35	65	-	-	100	10
DGT/VSQ/N0102.Employability Skills (60 Hours)	20	30	-	-	50	10
Total	215	335	-	-	550	100



Qualification Pack

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
IPR	Intellectual Property Rights

Qualification Pack

Glossary

Sector	Sector is a conglomeration of different business operations having similar business 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 organisation.
Occupational Standards (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 (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.

Qualification Pack

Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.
Sector	Sector is a conglomeration of different business operations having similar business 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 organisation.
Occupational Standards (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 (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.

Qualification Pack

National Occupational Standard	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an N
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.
Knowledge and Understanding (K)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (G)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today world. These skills are typically needed in any work environment in today world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contribute to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.