



DAS Set Top Box Installation & Service Technician

QP Code: ELE/Q8102

Version: 2.0

NSQF Level: 4

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ELE/Q8102: DAS Set Top Box Installation & Service Technician

Brief Job Description

The individual in this job role installs the set-top box at customer's premises, addresses the field serviceable complaints and coordinates with the technical team for activation of new connections.

Personal Attributes

The individual must be willing to work in the field and travel through the day from one customers premise to another. Punctuality, amenable behaviour, patience, good interpersonal relationship building, trustworthiness, integrity, and critical thinking are important attributes for this job.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [ELE/N8101: Install and repair DAS set-top box](#)
2. [ELE/N8102: Comprehend customer requirement](#)
3. [ELE/N9905: Work effectively at the workplace](#)
4. [ELE/N1002: Apply health and safety practices at the workplace](#)

Qualification Pack (QP) Parameters

Sector	Electronics
Sub-Sector	Communication and Broadcasting
Occupation	After Sales Service
Country	India
NSQF Level	4
Credits	NA
Aligned to NCO/ISCO/ISIC Code	NCO-2004/7243.45

Minimum Educational Qualification & Experience	8th Class ((Pass+ ITI (2 years after 8th with 2 years of relevant Experience) OR (10th Class with 2 years of relevant Experience)) OR I.T.I (after 10th OR 12th Class) OR Certificate-NSQF ((Level-3 in the domain of (Electronics / Electrical / Mechanical)) with 2 Years of experience In the relevant field
Minimum Level of Education for Training in School	8th Class
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	NA
Next Review Date	27/01/2025
Deactivation Date	31/07/2024
NSQC Approval Date	27/01/2022
Version	2.0
Reference code on NQR	2022/EHW/ESSC/05137
NQR Version	1.0

ELE/N8101: Install and repair DAS set-top box

Description

This unit is about installing set top box of DAS type at clients site, addressing service complaints and completing documentation

Elements and Performance Criteria

Collect the customers site details and carry necessary equipment and products

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

- PC1.** examine the work order and site details of the customer from the superior and customer
- PC2.** coordinate with stores department to collect the set box and other components or tools required for installation or servicing such as drilling machine, satellite meter, multi-meter

Install the set top box (DAS) at customers site

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

- PC3.** install set top box and check RF signal strength for non-digital through cable
- PC4.** check Digital Signal Strength and quality (MER, BER & Power) for digital
- PC5.** check distribution circuit path from distribution point to end customer and rectify loose connections
- PC6.** align distribution amplifier
- PC7.** connect set top box with TV
- PC8.** connect home theatre System with TV/ STB via HDMI, Audio/ Video/ Svideo/ SPDIF etc

Provide field service and resolve faults in case of complaint

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

- PC9.** identify the fault responsible for unsatisfactory/interrupted service by checking wire, signal strength, connectors, set top box
- PC10.** check the AC Mains output with the help of multi-meter and check the external power supply (Adaptor DC Output)
- PC11.** rectify the problem and resume uninterrupted service to the satisfaction of client

Servicing and resolving faults

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

- PC12.** fill in the technical report of the fault found in the defective set top box and send to the L2 service centre where it will be repaired

Collect documents and forms filled

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

- PC13.** maintain opening and closing documents for collection of material and testing
- PC14.** collect necessary forms such as Customer Registration and Program Authentication Form and submit to relevant departments in the company

Completing documentation

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

- PC15.** collect customer identity (ID) proof and Customer feedback form

Achieve productivity and quality targets as prescribed by company

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

- PC16.** achieve 100% installation and servicing as allotted
- PC17.** rectify customer complaint at first visit itself
- PC18.** offer most appropriate and cost-effective service as per customers requirement
- PC19.** ensure 100% complaints resolution
- PC20.** minimize material consumed for resolving the complaint/fault
- PC21.** carry out the work as per standards specified for the quality
- PC22.** follow the safety standards as per company's policy
- PC23.** ensure 100% functioning of the set top box such as Transponder, Signal Strength, Audio and Video quality, and Remote control

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** company's quality policies/ vision on: Customer Handling, Turnaround Time (TAT), Commitment
- KU2.** organization structure and process of other departments of importance
- KU3.** importance of the individual's role in the organization
- KU4.** reporting structure
- KU5.** profiling of customers
- KU6.** installation and activation policy
- KU7.** service model of the company
- KU8.** optimum signal strength/ signal quality for good reception
- KU9.** basics of input/output functions and block diagram of the set top box
- KU10.** functions of the set top box and remote control
- KU11.** structure of cable, parameters and the implications on signal
- KU12.** basic functioning of tuners
- KU13.** basics of digital signals and difference in analogue and digital
- KU14.** specifications of different kind of inputs available on TV sets such as RF, AV, RGB, VGA, USB and HDMI
- KU15.** transmission of television signals and functioning of television sets
- KU16.** basics of Digital TV signal distribution through HFC network including elements of fibre, coaxial chain and devices such as nodes, amplifier, taps, splitter, etc., from head ends to input point of consumer premises for DAS
- KU17.** concepts of modulation, demodulation, encryption, decryption, decoding, signal ingress, cross modulation, tuning, amplifying, coupling, attenuation, equalisation, digitising, etc., and their purposes
- KU18.** commonly used terms and their meanings such as ECM, EMM, EPG-SDT, MPEG
- KU19.** frequently occurring faults, causes and solutions
- KU20.** safety standards and practices to be followed while using power connection, stair to climb, first aid
- KU21.** Quality of Service (QoS) and End of Line (EoL) parameters and optimum range as specified by IS13420

- KU22.** parameters for digital signals, viz., MER, BER, C/N, CTV and CSO and proper recording of these for future reference
- KU23.** output ports of all types of set top boxes and input/ output ports of compatible products such as LCD/ LED TV, Projectors, PCs
- KU24.** connectivity of STB via additional device/ PC
- KU25.** safety precautions to be followed while using set top box by customer
- KU26.** implementation process for Engineering Change Order (ECO)
- KU27.** how to use hand tools such as lead tester, spanner, cutter, etc.
- KU28.** how to operate machines/meters such as RF strength meter, multi-meter, QAM meter, etc
- KU29.** how to operate computers and software installed

Generic Skills (GS)

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

- GS1.** complete forms such as work orders, invoices, maintenance records
- GS2.** note problems on job sheet and details of work done
- GS3.** document completion note for customer
- GS4.** record completion information in the ERP system
- GS5.** read warnings, instructions and other text material on product labels
- GS6.** read job sheet and complaints
- GS7.** read product operating manuals
- GS8.** read and understand electrical and electronic symbols, multiples and SI units
- GS9.** receive and ask for clarifications from supervisor on the job requirement
- GS10.** listen carefully to customer and interpret customers statement of symptoms
- GS11.** communicate in local language
- GS12.** educate and inform customer about product, contractual issues such as warranty, cost of service and module replacement
- GS13.** educate on precautions to be taken in order to avoid recurrence of problem
- GS14.** follow standard operating procedures while making decisions
- GS15.** take approval from supervisor in case the decision has to be made for exceptions
- GS16.** work with supervisor and co-workers to achieve smooth workflow
- GS17.** work with superiors and co-workers to share knowledge and learning
- GS18.** maintain personal grooming
- GS19.** be polite, patient and courteous under all circumstances with all types of customers
- GS20.** decide on the spot on whether interaction of customer with superior is necessary or not
- GS21.** maintain proper etiquette including the appropriate physical distance with customer during conversation, not entering bedroom without permission
- GS22.** put customer at ease and generate customers confidence
- GS23.** seek inputs at assess the problems
- GS24.** match symptoms of the fault noticed to the cause of the problem
- GS25.** interpret accurately drawings, wiring and job specifications/instructions
- GS26.** improve work processes

GS27. anticipate and avoid hazards that may occur during repairs because of tools, materials used or repair processes

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Collect the customers site details and carry necessary equipment and products</i>	6	4	-	-
PC1. examine the work order and site details of the customer from the superior and customer	3	2	-	-
PC2. coordinate with stores department to collect the set box and other components or tools required for installation or servicing such as drilling machine, satellite meter, multi-meter	3	2	-	-
<i>Install the set top box (DAS) at customers site</i>	9	17	-	-
PC3. install set top box and check RF signal strength for non-digital through cable	2	4	-	-
PC4. check Digital Signal Strength and quality (MER, BER & Power) for digital	1	3	-	-
PC5. check distribution circuit path from distribution point to end customer and rectify loose connections	2	2	-	-
PC6. align distribution amplifier	1	3	-	-
PC7. connect set top box with TV	1	2	-	-
PC8. connect home theatre System with TV/ STB via HDMI, Audio/ Video/ Svideo/ SPDIF etc	2	3	-	-
<i>Provide field service and resolve faults in case of complaint</i>	8	15	-	-
PC9. identify the fault responsible for unsatisfactory/interrupted service by checking wire, signal strength, connectors, set top box	3	5	-	-
PC10. check the AC Mains output with the help of multi-meter and check the external power supply (Adaptor DC Output)	2	5	-	-
PC11. rectify the problem and resume uninterrupted service to the satisfaction of client	3	5	-	-
<i>Servicing and resolving faults</i>	2	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. fill in the technical report of the fault found in the defective set top box and send to the L2 service centre where it will be repaired	2	3	-	-
<i>Collect documents and forms filled</i>	6	6	-	-
PC13. maintain opening and closing documents for collection of material and testing	3	3	-	-
PC14. collect necessary forms such as Customer Registration and Program Authentication Form and submit to relevant departments in the company	3	3	-	-
<i>Completing documentation</i>	1	2	-	-
PC15. collect customer identity (ID) proof and Customer feedback form	1	2	-	-
<i>Achieve productivity and quality targets as prescribed by company</i>	8	13	-	-
PC16. achieve 100% installation and servicing as allotted	1	3	-	-
PC17. rectify customer complaint at first visit itself	1	2	-	-
PC18. offer most appropriate and cost-effective service as per customer's requirement	1	2	-	-
PC19. ensure 100% complaints resolution	1	1	-	-
PC20. minimize material consumed for resolving the complaint/fault	1	1	-	-
PC21. carry out the work as per standards specified for the quality	1	1	-	-
PC22. follow the safety standards as per company's policy	1	1	-	-
PC23. ensure 100% functioning of the set top box such as Transponder, Signal Strength, Audio and Video quality, and Remote control	1	2	-	-
NOS Total	40	60	-	-

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N8101
NOS Name	Install and repair DAS set-top box
Sector	Electronics
Sub-Sector	Communication and Broadcasting
Occupation	After Sale Service
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	24/03/2016
Next Review Date	27/01/2025
NSQC Clearance Date	27/01/2022

ELE/N8102: Comprehend customer requirement

Description

This OS unit is about interacting with customer to understand their requirement with respect to problem in the appliance

Elements and Performance Criteria

Interacting with customer prior to visit

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

- PC1.** check customer complaint registered at customer care or installation schedule
- PC2.** call customer to confirm problem and fix time for visit
- PC3.** greet the customer and confirm the problem registered
- PC4.** be polite and patient when interacting with customer
- PC5.** check about warranty status of appliance and annual maintenance contract
- PC6.** anticipate possible problems to carry tools and parts accordingly
- PC7.** ascertain customer location in order to make the route plan for the day

Interacting with customer at their premises

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

- PC8.** enquire about the symptoms and history of problems in the appliance
- PC9.** ask about the age of appliance and status of upkeep
- PC10.** identify the problem based on customers information
- PC11.** communicate the problems identified and educate on possible reasons
- PC12.** inform about costs involved

Suggesting solutions to customer

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

- PC13.** discuss the problem(s) identified with customer
- PC14.** suggest possible solutions and costs involved
- PC15.** explain the time required and methodology for servicing necessary
- PC16.** seek customers approval on further action

Achieving productivity and quality

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

- PC17.** accurately assess the problem and solution(s) necessary
- PC18.** offer most appropriate and cost-effective service as per customers requirement
- PC19.** communicate problem effectively in order to secure customers confidence
- PC20.** ensure customer satisfaction and positive feedback
- PC21.** record minimum customer complaints post service
- PC22.** avoid repeat problem post service
- PC23.** prepare most optimum route plan to complete daily target visits

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** companys policies on: customer care
- KU2.** companys code of conduct
- KU3.** organisation culture and typical customer profile
- KU4.** companys reporting structure
- KU5.** companys documentation policy
- KU6.** companys products and recurring problems reported in consumer appliances
- KU7.** how to communicate with customers in order to put them at ease
- KU8.** basic electrical and mechanical modules of various products
- KU9.** electronics involved in the type of product
- KU10.** models of different appliances and their common and distinguishing features
- KU11.** etiquette to be followed at customers premises
- KU12.** precautions to be taken while handling field calls and dealing with customers
- KU13.** 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.** document the completed work on computer and paper
- GS2.** note problems on job sheet and details of work done
- GS3.** read job sheet for installation as registered by customer care/ companys ERP system
- GS4.** read product and module serial numbers and interpret details such as make, date, availability
- GS5.** receive and ask for clarifications from supervisor on the job requirement
- GS6.** listen carefully to customer and interpret customers statement of symptoms
- GS7.** communicate in local language
- GS8.** educate and inform customer about product, contractual issues such as warranty, cost of service and module replacement
- GS9.** educate on precautions to be taken in order to avoid recurrence of problem
- GS10.** follow standard operating procedures while making decisions
- GS11.** take approval from supervisor in case the decision has to be made for exceptions
- GS12.** decide on the spot on whether interaction of customer with supervisor is necessary or not
- GS13.** decide when to call customer care and close the call after work is done to customers satisfaction and documentation is complete
- GS14.** share work load as required
- GS15.** achieve the targets given on installation per day or month
- GS16.** report on any customer concerns to superiors without delay
- GS17.** maintain personal grooming
- GS18.** be polite, patient and courteous under all circumstances with all types of customers
- GS19.** decide on the spot on whether interaction of customer with superior is necessary or not

- GS20.** maintain proper etiquette including the appropriate physical distance with customer during conversation, not entering bedroom without permission
- GS21.** put customer at ease and generate customers confidence
- GS22.** spot process disruptions and delays
- GS23.** seek inputs at assess the problems
- GS24.** reduce repetition of errors in installation
- GS25.** improve work processes

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Interacting with customer prior to visit</i>	8	14	-	-
PC1. check customer complaint registered at customer care or installation schedule	1	2	-	-
PC2. call customer to confirm problem and fix time for visit	1	2	-	-
PC3. greet the customer and confirm the problem registered	1	2	-	-
PC4. be polite and patient when interacting with customer	1	2	-	-
PC5. check about warranty status of appliance and annual maintenance contract	1	2	-	-
PC6. anticipate possible problems to carry tools and parts accordingly	1	2	-	-
PC7. ascertain customer location in order to make the route plan for the day	2	2	-	-
<i>Interacting with customer at their premises</i>	10	15	-	-
PC8. enquire about the symptoms and history of problems in the appliance	2	3	-	-
PC9. ask about the age of appliance and status of upkeep	2	3	-	-
PC10. identify the problem based on customers information	2	3	-	-
PC11. communicate the problems identified and educate on possible reasons	2	3	-	-
PC12. inform about costs involved	2	3	-	-
<i>Suggesting solutions to customer</i>	10	18	-	-
PC13. discuss the problem(s) identified with customer	2	5	-	-
PC14. suggest possible solutions and costs involved	3	4	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC15. explain the time required and methodology for servicing necessary	3	5	-	-
PC16. seek customers approval on further action	2	4	-	-
<i>Achieving productivity and quality</i>	7	18	-	-
PC17. accurately assess the problem and solution(s) necessary	1	3	-	-
PC18. offer most appropriate and cost-effective service as per customers requirement	1	3	-	-
PC19. communicate problem effectively in order to secure customers confidence	1	2	-	-
PC20. ensure customer satisfaction and positive feedback	1	2	-	-
PC21. record minimum customer complaints post service	1	2	-	-
PC22. avoid repeat problem post service	1	3	-	-
PC23. prepare most optimum route plan to complete daily target visits	1	3	-	-
NOS Total	35	65	-	-

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N8102
NOS Name	Comprehend customer requirement
Sector	Electronics
Sub-Sector	Communication and Broadcasting
Occupation	After Sales Service
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	24/03/2016
Next Review Date	27/01/2025
NSQC Clearance Date	27/01/2022

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
- 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

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
- 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

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	-	-
PC13. seek and select opportunities for continuous professional development	1	1	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
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	-	-
PC25. follow organisational guidelines and legal requirements on disclosure and confidentiality	1	2	-	-
<i>Uphold social diversity at the workplace</i>	10	11	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
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	-	-

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
NSQC Clearance Date	30/12/2021

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 I
- PC12.** exhibit rescue and first-aid techniques in case of fire or electrocution

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
- 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
- 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

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	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. <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 I 	1	3	-	-
PC12. exhibit rescue and first-aid techniques in case of fire or electrocution	1	3	-	-
<i>Follow emergencies, rescue and first-aid procedures</i>	6	13	-	-
PC13. administer appropriate first aid to victims in case of bleeding, burns, choking, electric shock, poisoning etc.	1	3	-	-
PC14. administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock,	1	2	-	-
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	2	4	-	-
PC16. use correct method to move injured people and others during an emergency	2	4	-	-
<i>Effective waste management/recycling practices</i>	5	12	-	-
PC17. identify recyclable and non-recyclable, and hazardous waste generated	1	3	-	-
PC18. segregate waste into different categories	1	2	-	-
PC19. ensure disposal of non-recyclable waste appropriately	1	2	-	-
PC20. deposit non-recyclable and reusable material at identified location	1	3	-	-
PC21. follow processes specified for disposal of hazardous waste	1	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	35	65	-	-

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	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 Element/ 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 Element/ 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 center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.
6. To pass the Qualification Pack assessment, every trainee should score the Recommended Pass % aggregate for the QP.
7. In case of unsuccessful completion, the trainee may seek reassessment on the 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/N8101.Install and repair DAS set-top box	40	60	-	-	100	30
ELE/N8102.Comprehend customer requirement	35	65	-	-	100	30
ELE/N9905.Work effectively at the workplace	40	60	-	-	100	20
ELE/N1002.Apply health and safety practices at the workplace	35	65	-	-	100	20
Total	150	250	-	-	400	100

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
AC	Alternating current
BER	Bit Error rate
DAS	Digital Addressable System
DC	Direct current
DTH	Direct to home
HDMI	High definition multimedia interface
LNBC	Low Noise block down converter
EPG	Electronic Program Guide
ECM	Entitlement Control Message
EMM	Entitlement Management Message
HFC	Hybrid Fibre Coax
MSO	Multi-system Operator
RF	Radio frequency

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.
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.