Qualification Pack

HVAC (Heating, Ventilation, and Air Conditioning) Technician

QP Code: ELE/Q3112

Version: 4.0

NSQF Level: 4

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Qualification Pack

ELE/Q3112: HVAC (Heating, Ventilation, and Air Conditioning) Technician

Brief Job Description

The individual in this job role maintains and repairs heating, air conditioning and ventilation systems in commercial and industrial areas. The individual engages with the client to understand the work requirement and follows organizational norms to complete the work.

Personal Attributes

The individual must be willing to work in the field and travel throughout the day from one location to another. The individual should have a patient, amenable demeanour and skills for interpersonal relationship building, critical thinking and punctuality

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. ELE/N3192: Engage with customer for service of HVAC system
2. ELE/N3140: Service, troubleshoot and repair a HVAC system (chillers)
3. ELE/N3141: Service, troubleshoot and repair a packaged type HVAC ducted system
4. DGT/VSQ/N0101: Employability Skills (30 Hours)

Qualification Pack (QP) Parameters

Sector	Electronics
Sub-Sector	Consumer Electronics & IT Hardware
Occupation	After Sales Service
Country	India
NSQF Level	4
Credits	17
Aligned to NCO/ISCO/ISIC Code	NCO-2015/3115.1100

Minimum Educational Qualification & Experience	12th grade Pass (12th grade or equivalent) with NA of experience OR 10th grade pass (10th grade or equivalent) with 3 Years of experience Relevant Experience in Consumer Electronics & IT Hardware OR Previous relevant Qualification of NSQF Level (Level-3 in relevant domain) with 3 Years of experience Relevant Experience in Consumer Electronics & IT Hardware
Minimum Level of Education for Training in School	10th Class
Pre-Requisite License or Training	NA
Minimum Job Entry Age	16 Years
Last Reviewed On	NA
Next Review Date	07/10/2028
NSQC Approval Date	07/10/2025
Version	4.0
Reference code on NQR	QG-04-EH-044992025-V2-ESSCI
NQR Version	2

Remarks:

NA

Qualification Pack

ELE/N3192: Engage with customer for service of HVAC system

Description

This NOS is about to interact professionally with customers to understand service requirements, schedule visits, explain maintenance or repair processes, provide cost estimates, and ensure customer satisfaction during and after HVAC system servicing.

Scope

The scope covers the following :

- Introduction and Interact with the client prior to initiating work
- Collate the work requirements
- Provide possible solutions to the client

Elements and Performance Criteria

Introduction and Interact with the client prior to initiating work

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

PC1. Discuss work requirements with the client, and maintain and repair heating, air conditioning, and ventilation systems as per organizational norms

PC2. interact with the client to list the issues and/or requirements and Connect with customer use mobile CRM tools, digital service forms, and IoT-based customer data to schedule visits, understand system usage

PC3. plan the daily route based on number of client visits and client locations

PC4. interpret the symptoms or causes of the problem(s) and the age of the system

PC5. check the warranty status and annual maintenance contract of the system based on the client's information

Collate the work requirements

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

PC6. analyze the conditions and requirements of the site for the problem identified to arrive at solution

PC7. check client's requirement and study drawings and layouts of the work site to confirm the feasibility of the solution

PC8. identify the possible problems in carrying tools/equipment and parts to service or repair the system and find a solution for these

Provide possible solutions to the client

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

PC9. confirm the identified problem(s) with the client and advise the client on possible reasons to arrive at a possible solution

PC10. inform the client about the time and cost involved

PC11. identify the best methodology and quickest means for service or repair as per quality standards

PC12. ensure that client's approval is received on solution, time and cost before taking further action

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. Basic understanding of HVAC system components and functions
KU2. Knowledge of CRM tools, digital service forms, and IoT-based client data systems.
KU3. Awareness of warranty terms, AMC policies, and organizational service procedures.
KU4. Understanding of site conditions, layouts, and safety standards.
KU5. Knowledge of documentation and communication protocols for client interaction

Generic Skills (GS)

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

GS1. Effective communication and interpersonal skills for client handling.
GS2. Analytical ability to identify faults and suggest solutions.
GS3. Planning and time management skills for route and visit scheduling.
GS4. Digital proficiency in using CRM and service management software.
GS5. Customer service orientation to ensure satisfaction and trust.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Introduction and Interact with the client prior to initiating work	**15**	**20**	**-**	**4**
PC1. Discuss work requirements with the client, and maintain and repair heating, air conditioning, and ventilation systems as per organizational norms	-	-	-	-
PC2. interact with the client to list the issues and/or requirements and Connect with customer use mobile CRM tools, digital service forms, and IoT-based customer data to schedule visits, understand system usage	-	-	-	-
PC3. plan the daily route based on number of client visits and client locations	-	-	-	-
PC4. interpret the symptoms or causes of the problem(s) and the age of the system	-	-	-	-
PC5. check the warranty status and annual maintenance contract of the system based on the client's information	-	-	-	-
Collate the work requirements	**13**	**16**	**-**	**3**
PC6. analyze the conditions and requirements of the site for the problem identified to arrive at solution	-	-	-	-
PC7. check client's requirement and study drawings and layouts of the work site to confirm the feasibility of the solution	-	-	-	-
PC8. identify the possible problems in carrying tools/equipment and parts to service or repair the system and find a solution for these	-	-	-	-
Provide possible solutions to the client	**12**	**14**	**-**	**3**
PC9. confirm the identified problem(s) with the client and advise the client on possible reasons to arrive at a possible solution	-	-	-	-
PC10. inform the client about the time and cost involved	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. identify the best methodology and quickest means for service or repair as per quality standards	-	-	-	-
PC12. ensure that client's approval is received on solution, time and cost before taking further action	-	-	-	-
NOS Total	**40**	**50**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N3192
NOS Name	Engage with customer for service of HVAC system
Sector	Electronics
Sub-Sector	
Occupation	After Sales Service
NSQF Level	4
Credits	4
Version	1.0
Last Reviewed Date	07/10/2025
Next Review Date	07/10/2028
NSQC Clearance Date	07/10/2025

ELE/N3140: Service, troubleshoot and repair a HVAC system (chillers)

Description

This NOS unit is about troubleshooting and repairing HVAC system (chillers) and using HVAC codes and standards to do technical calculations for optimum performance.

Scope

The scope covers the following :

- Perform maintenance of the system
- Troubleshoot and repair the system
- Check the performance after service and/or repair

Elements and Performance Criteria

Perform maintenance of the system

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

PC1. identify the process to clean the chiller, cooling tower, condenser, blower, filter, coils and pump valves, Lubricate fan, motor bearings, fan belt tension as per standards and standards operating procedures (SOPs)

PC2. collect appropriate tools and equipment for maintenance and service

PC3. perform checks such as water treatment check, proper creation of broken gasket, checks to detect any cracks or leaks and ensure proper insulation lining of water piping

PC4. ensure to tighten all screws and electrical connections fasteners to remove vibration

PC5. perform proper procedure to fix damper linkages, set screws, carry out blade adjustments and clean them while ensuring not to lubricate the nylon damper rod bushings

Troubleshoot and repair the system

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

PC6. repair using airflow analyzers, digital multimeters, thermal imaging cameras, and cloud-connected BMS (Building Management System) interfaces for efficient diagnostics

PC7. identify issues and troubleshoot low-side components such as air handling unit (AHU), fan and filter

PC8. check electrical components such as electric circuit, earthing connection, fuses, electrical panels etc. for functioning and make cable connections

PC9. test the components to correct any noise or vibration in the HVAC system, inappropriate flow of air through the grills and diffusers, filters, contamination and confirm the indoor air quality and cooling temperature/pressure in refrigerant/water lines

PC10. use manometer to check pressure loss in filters, if any

PC11. perform appropriate steps to check fan coil unit (FCU), water valves and expansion valves, the motor conditions, overheat, noise, excessive vibration, slow run and failure to start, fix capacitor, relays etc. and leak detection test of refrigerants

PC12. repair faulty insulation, if any, in refrigerant lines and water pipes

PC13. use clamp meter to check current and voltage and correct in case of any issues

PC14. identify faulty electrical components such as capacitor, relay, motor and cables, condenser, evaporator, filter and expansion valve and replace these

PC15. record and report the repair work done

Check the performance after service and/or repair

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

PC16. check the performance of the HVAC system as per standards and the current range of the supply to the electrical systems is in optimum range

PC17. test the airflow through the ducts using an anemometer, level of humidity, cooling and heating temperature range as per requirement

PC18. record dry and wet bulb temperature at each cooling/heating region

PC19. check the efficiency of the system and record performance parameters of the system

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. Understand standard procedures for cleaning, lubricating, tightening, and maintaining HVAC components like chillers, condensers, blowers, and filters.

KU2. Knowledge of tools, instruments, and digital diagnostic devices such as airflow analyzers, multimeters, and thermal imaging cameras.

KU3. Understand HVAC electrical systems, including circuits, motors, relays, capacitors, and earthing requirements.

KU4. Knowledge of air quality parameters, refrigerant handling, and performance testing methods (airflow, humidity, temperature, and pressure checks).

KU5. Understand safety standards, maintenance documentation, and reporting procedures as per organizational SOPs.

Generic Skills (GS)

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

GS1. Use maintenance tools and testing instruments efficiently for inspection, troubleshooting, and performance verification

GS2. Apply analytical and problem-solving skills to identify faults and carry out timely repairs.

GS3. Communicate effectively with supervisors and record service or repair details accurately.

GS4. Follow safety and environmental norms while handling refrigerants, electrical components, and mechanical parts.

GS5. Demonstrate time management, precision, and adherence to quality standards during maintenance and testing activities

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Perform maintenance of the system	**15**	**18**	**-**	**4**
PC1. identify the process to clean the chiller, cooling tower, condenser, blower, filter, coils and pump valves, Lubricate fan, motor bearings, fan belt tension as per standards and standards operating procedures (SOPs)	-	-	-	-
PC2. collect appropriate tools and equipment for maintenance and service	-	-	-	-
PC3. perform checks such as water treatment check, proper creation of broken gasket, checks to detect any cracks or leaks and ensure proper insulation lining of water piping	-	-	-	-
PC4. ensure to tighten all screws and electrical connections fasteners to remove vibration	-	-	-	-
PC5. perform proper procedure to fix damper linkages, set screws, carry out blade adjustments and clean them while ensuring not to lubricate the nylon damper rod bushings	-	-	-	-
Troubleshoot and repair the system	**15**	**20**	**-**	**4**
PC6. repair using airflow analyzers, digital multimeters, thermal imaging cameras, and cloud-connected BMS (Building Management System) interfaces for efficient diagnostics	-	-	-	-
PC7. identify issues and troubleshoot low-side components such as air handling unit (AHU), fan and filter	-	-	-	-
PC8. check electrical components such as electric circuit, earthing connection, fuses, electrical panels etc. for functioning and make cable connections	-	-	-	-
PC9. test the components to correct any noise or vibration in the HVAC system, inappropriate flow of air through the grills and diffusers, filters, contamination and confirm the indoor air quality and cooling temperature/pressure in refrigerant/water lines	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. use manometer to check pressure loss in filters, if any	-	-	-	-
PC11. perform appropriate steps to check fan coil unit (FCU), water valves and expansion valves, the motor conditions, overheat, noise, excessive vibration, slow run and failure to start, fix capacitor, relays etc. and leak detection test of refrigerants	-	-	-	-
PC12. repair faulty insulation, if any, in refrigerant lines and water pipes	-	-	-	-
PC13. use clamp meter to check current and voltage and correct in case of any issues	-	-	-	-
PC14. identify faulty electrical components such as capacitor, relay, motor and cables, condenser, evaporator, filter and expansion valve and replace these	-	-	-	-
PC15. record and report the repair work done	-	-	-	-
Check the performance after service and/or repair	**10**	**12**	**-**	**2**
PC16. check the performance of the HVAC system as per standards and the current range of the supply to the electrical systems is in optimum range	-	-	-	-
PC17. test the airflow through the ducts using an anemometer, level of humidity, cooling and heating temperature range as per requirement	-	-	-	-
PC18. record dry and wet bulb temperature at each cooling/heating region	-	-	-	-
PC19. check the efficiency of the system and record performance parameters of the system	-	-	-	-
NOS Total	**40**	**50**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N3140
NOS Name	Service, troubleshoot and repair a HVAC system (chillers)
Sector	Electronics
Sub-Sector	Consumer Electronics & IT Hardware
Occupation	After Sales Support
NSQF Level	4
Credits	5
Version	3.0
Last Reviewed Date	07/10/2025
Next Review Date	07/10/2028
NSQC Clearance Date	07/10/2025

ELE/N3141: Service, troubleshoot and repair a packaged type HVAC ducted system

Description

This NOS unit is about performing service, repair and performance check of a packaged type HVAC ducted system at a site.

Scope

The scope covers the following :

- Perform Service and Repair of Duct System
- Perform Service and Repair of Packaged Type HVAC System
- Check Performance of Ducts and Packaged System
- Maintain Safe and Efficient Work Practices

Elements and Performance Criteria

Perform Service and Repair of Duct System

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

PC1. Identify faults in beam clamps, conduits, dampers, pipe and duct hangers, and refrigeration lines

PC2. Inspect ducts for bends, kinks, cracks, or other physical damages.

PC3. Measure and verify return air, supply air, and duct dimensions as per system design.

PC4. Check the condition and operation of fans, blowers, and motors.

PC5. Clean ducts using appropriate robotic or manual cleaning methods

PC6. Remove scale deposits from water-cooled condensers.

PC7. Inspect and clean the drainage system of AHU (Air Handling Unit) and FCU (Fan Coil Unit).

PC8. Detect and seal air leaks in ducts effectively.

PC9. Ensure all insulation and acoustic seals are properly tightened and intact

PC10. Replace damaged or leaking dampers in the ventilation system.

PC11. Use appropriate tools and follow safety procedures while performing duct system maintenance.

Perform Service and Repair of Packaged Type HVAC System

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

PC12. Check, clean, and tighten electrical terminals, thermostats, and fuses

PC13. Measure and verify voltage balance across phases.

PC14. Inspect and clean the cooling tower to maintain performance

PC15. Clean evaporator and air-cooled condenser coils thoroughly.

PC16. Inspect belts, pulleys, and bearings; repair and lubricate as required.

PC17. Lubricate motor bearings following standard procedures

PC18. Clean or replace air filters to ensure proper airflow

PC19. Inspect refrigerant pressure and repair any leaks found

PC20. Check refrigerant levels and recharge gas as per manufacturer guidelines

PC21. Inspect and replace compressors and metering devices if necessary.

PC22. Adjust HVAC system controls as per operational requirements

PC23. Use correct tools and follow safe work practices during repair.

PC24. Handle refrigerants carefully, adhering to environmental and safety standards

PC25. Complete maintenance logs and service reports accurately

Check Performance of Ducts and Packaged System

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

PC26. Evaluate cooling and heating efficiency of the system

PC27. Measure airflow using an anemometer to ensure proper circulation

PC28. Check static pressure in the duct system for optimal performance.

PC29. Verify refrigerant charge as per system specification.

PC30. Inspect and test mechanical components, including gears, for wear or malfunction

PC31. Measure temperature drop across coils to confirm cooling efficiency.

PC32. Check system parameters and ensure they match required performance standards

Maintain Safe and Efficient Work Practices

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

PC33. Follow safety procedures while working on HVAC systems and always wear the required Personal Protective Equipment (PPE), such as gloves, goggles, and safety shoes.

PC34. Report unsafe conditions or hazards like gas leaks, electrical faults, or damaged equipment to the supervisor or safety officer immediately.

PC35. Use tools and testing equipment properly, and check that they are in good working condition before use to avoid accidents.

PC36. Handle refrigerants, gases, and chemicals safely as per the manufacturer's instructions and store them securely after use.

PC37. Maintain a clean and organized work area, dispose of waste properly, and use energy and materials efficiently to reduce environmental impact

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. Understand the working principles and components of duct and packaged HVAC systems, including ducts, dampers, fans, filters, coils, and condensers

KU2. Know standard inspection, cleaning, and repair procedures for ducts, air handling units (AHU), and fan coil units (FCU).

KU3. Understand measurement methods for airflow, static pressure, refrigerant levels, and temperature using tools such as anemometers and pressure gauges.

KU4. Have knowledge of safe handling procedures for refrigerants, electrical components, and mechanical parts as per environmental and workplace safety standards.

KU5. Understand documentation processes for maintenance logs, performance reports, and service checklists as per organizational guidelines.

Generic Skills (GS)

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

GS1. Use appropriate tools, instruments, and testing equipment effectively for inspection, servicing, and repair tasks.

GS2. Apply problem-solving and analytical skills to diagnose faults in ductwork and packaged systems efficiently.

GS3. Communicate effectively with supervisors, team members, and clients to report findings and updates clearly.

GS4. Follow safety protocols, use PPE properly, and handle refrigerants and chemicals responsibly.

GS5. Demonstrate time management, accuracy, and quality orientation while performing maintenance, testing, and documentation work.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Perform Service and Repair of Duct System	**11**	**20**	**-**	**-**
PC1. Identify faults in beam clamps, conduits, dampers, pipe and duct hangers, and refrigeration lines	-	-	-	-
PC2. Inspect ducts for bends, kinks, cracks, or other physical damages.	-	-	-	-
PC3. Measure and verify return air, supply air, and duct dimensions as per system design.	-	-	-	-
PC4. Check the condition and operation of fans, blowers, and motors.	-	-	-	-
PC5. Clean ducts using appropriate robotic or manual cleaning methods	-	-	-	-
PC6. Remove scale deposits from water-cooled condensers.	-	-	-	-
PC7. Inspect and clean the drainage system of AHU (Air Handling Unit) and FCU (Fan Coil Unit).	-	-	-	-
PC8. Detect and seal air leaks in ducts effectively.	-	-	-	-
PC9. Ensure all insulation and acoustic seals are properly tightened and intact	-	-	-	-
PC10. Replace damaged or leaking dampers in the ventilation system.	-	-	-	-
PC11. Use appropriate tools and follow safety procedures while performing duct system maintenance.	-	-	-	-
Perform Service and Repair of Packaged Type HVAC System	**16**	**26**	**-**	**-**
PC12. Check, clean, and tighten electrical terminals, thermostats, and fuses	-	-	-	-
PC13. Measure and verify voltage balance across phases.	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. Inspect and clean the cooling tower to maintain performance	-	-	-	-
PC15. Clean evaporator and air-cooled condenser coils thoroughly.	-	-	-	-
PC16. Inspect belts, pulleys, and bearings; repair and lubricate as required.	-	-	-	-
PC17. Lubricate motor bearings following standard procedures	-	-	-	-
PC18. Clean or replace air filters to ensure proper airflow	-	-	-	-
PC19. Inspect refrigerant pressure and repair any leaks found	-	-	-	-
PC20. Check refrigerant levels and recharge gas as per manufacturer guidelines	-	-	-	-
PC21. Inspect and replace compressors and metering devices if necessary.	-	-	-	-
PC22. Adjust HVAC system controls as per operational requirements	-	-	-	-
PC23. Use correct tools and follow safe work practices during repair.	-	-	-	-
PC24. Handle refrigerants carefully, adhering to environmental and safety standards	-	-	-	-
PC25. Complete maintenance logs and service reports accurately	-	-	-	-
Check Performance of Ducts and Packaged System	**8**	**9**	**-**	**-**
PC26. Evaluate cooling and heating efficiency of the system	-	-	-	-
PC27. Measure airflow using an anemometer to ensure proper circulation	-	-	-	-
PC28. Check static pressure in the duct system for optimal performance.	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC29. Verify refrigerant charge as per system specification.	-	-	-	-
PC30. Inspect and test mechanical components, including gears, for wear or malfunction	-	-	-	-
PC31. Measure temperature drop across coils to confirm cooling efficiency.	-	-	-	-
PC32. Check system parameters and ensure they match required performance standards	-	-	-	-
Maintain Safe and Efficient Work Practices	**5**	**5**	**-**	**-**
PC33. Follow safety procedures while working on HVAC systems and always wear the required Personal Protective Equipment (PPE), such as gloves, goggles, and safety shoes.	-	-	-	-
PC34. Report unsafe conditions or hazards like gas leaks, electrical faults, or damaged equipment to the supervisor or safety officer immediately.	-	-	-	-
PC35. Use tools and testing equipment properly, and check that they are in good working condition before use to avoid accidents.	-	-	-	-
PC36. Handle refrigerants, gases, and chemicals safely as per the manufacturer’s instructions and store them securely after use.	-	-	-	-
PC37. Maintain a clean and organized work area, dispose of waste properly, and use energy and materials efficiently to reduce environmental impact	-	-	-	-
NOS Total	**40**	**60**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N3141
NOS Name	Service, troubleshoot and repair a packaged type HVAC ducted system
Sector	Electronics
Sub-Sector	Consumer Electronics & IT Hardware
Occupation	After Sales Support
NSQF Level	4
Credits	7
Version	3.0
Last Reviewed Date	07/10/2025
Next Review Date	07/10/2028
NSQC Clearance Date	07/10/2025

DGT/VSQ/N0101: Employability Skills (30 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
- 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. understand the significance of employability skills in meeting the job requirements

Constitutional values – Citizenship

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

PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices

Becoming a Professional in the 21st Century

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

PC3. explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.

Basic English Skills

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

PC4. speak with others using some basic English phrases or sentences

Communication Skills

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

PC5. follow good manners while communicating with others

PC6. work with others in a team

Diversity & Inclusion

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

PC7. communicate and behave appropriately with all genders and PwD

PC8. report any issues related to sexual harassment

Financial and Legal Literacy

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

PC9. use various financial products and services safely and securely

PC10. calculate income, expenses, savings etc.

PC11. approach the concerned authorities for any exploitation as per legal rights and laws

Essential Digital Skills

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

PC12. operate digital devices and use its features and applications securely and safely

PC13. use internet and social media platforms securely and safely

Entrepreneurship

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

PC14. identify and assess opportunities for potential business

PC15. identify sources for arranging money and associated financial and legal challenges

Customer Service

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

PC16. identify different types of customers

PC17. identify customer needs and address them appropriately

PC18. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

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

PC19. create a basic biodata

PC20. search for suitable jobs and apply

PC21. identify and register apprenticeship opportunities as per requirement

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills

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 basic spoken English language

KU6. Do and dont of effective communication

KU7. inclusivity and its importance

KU8. different types of disabilities and appropriate communication and behaviour towards PwD

KU9. different types of financial products and services

KU10. how to compute income and expenses
KU11. importance of maintaining safety and security in financial transactions
KU12. different legal rights and laws
KU13. how to operate digital devices and applications safely and securely
KU14. ways to identify business opportunities
KU15. types of customers and their needs
KU16. how to apply for a job and prepare for an interview
KU17. apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

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

GS1. communicate effectively using appropriate language
GS2. behave politely and appropriately with all
GS3. perform basic calculations
GS4. solve problems effectively
GS5. be careful and attentive at work
GS6. use time effectively
GS7. maintain hygiene and sanitisation to avoid infection

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Introduction to Employability Skills	**1**	**1**	**-**	**-**
PC1. understand the significance of employability skills in meeting the job requirements	-	-	-	-
Constitutional values – Citizenship	**1**	**1**	**-**	**-**
PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
Becoming a Professional in the 21st Century	**1**	**3**	**-**	**-**
PC3. explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.	-	-	-	-
Basic English Skills	**2**	**3**	**-**	**-**
PC4. speak with others using some basic English phrases or sentences	-	-	-	-
Communication Skills	**1**	**1**	**-**	**-**
PC5. follow good manners while communicating with others	-	-	-	-
PC6. work with others in a team	-	-	-	-
Diversity & Inclusion	**1**	**1**	**-**	**-**
PC7. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC8. report any issues related to sexual harassment	-	-	-	-
Financial and Legal Literacy	**3**	**4**	**-**	**-**
PC9. use various financial products and services safely and securely	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. calculate income, expenses, savings etc.	-	-	-	-
PC11. approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
Essential Digital Skills	**4**	**6**	**-**	**-**
PC12. operate digital devices and use its features and applications securely and safely	-	-	-	-
PC13. use internet and social media platforms securely and safely	-	-	-	-
Entrepreneurship	**3**	**5**	**-**	**-**
PC14. identify and assess opportunities for potential business	-	-	-	-
PC15. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
Customer Service	**2**	**2**	**-**	**-**
PC16. identify different types of customers	-	-	-	-
PC17. identify customer needs and address them appropriately	-	-	-	-
PC18. follow appropriate hygiene and grooming standards	-	-	-	-
Getting ready for apprenticeship & Jobs	**1**	**3**	**-**	**-**
PC19. create a basic biodata	-	-	-	-
PC20. search for suitable jobs and apply	-	-	-	-
PC21. identify and register apprenticeship opportunities as per requirement	-	-	-	-
NOS Total	**20**	**30**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0101
NOS Name	Employability Skills (30 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	2
Credits	1
Version	1.0
Last Reviewed Date	07/10/2025
Next Review Date	07/10/2028
NSQC Clearance Date	07/10/2025

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.

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/N3192.Engage with customer for service of HVAC system	40	50	-	10	100	20
ELE/N3140.Service, troubleshoot and repair a HVAC system (chillers)	40	50	-	10	100	30
ELE/N3141.Service, troubleshoot and repair a packaged type HVAC ducted system	40	60	-	-	100	30
DGT/VSQ/N0101.Employability Skills (30 Hours)	20	30	-	-	50	20
Total	**140**	**190**	**-**	**20**	**350**	**100**

Acronyms

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

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.