MEP Supervisor - Maintenance

Options: Supervise the use and control of BMS

QP Code: ICE/CON/Q1001

Version: 1.0

NSQF Level: 5

THE INSTITUTION OF CIVIL ENGINEERS SOCIETY || 533-R
Model Town Ludhiana || email:cmswami@ice.net.in

Contents

ICE/CON/Q1001: MEP Supervisor - Maintenance

Brief Job Description

A MEP Supervisor - Maintenance supervises the maintenance and repair of Mechanical, Electrical and Plumbing (MEP) systems in a building. The individual also uses computer and applies appropriate IT skills in work. The person may optionally supervise the maintenance of the infrastructure and use of the Building Management System (BMS).

Personal Attributes

The individual should be physically fit and mentally alert. The person should have appropriate verbal and written communication skills and the ability to cooperate with others.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. ICE/CON/N1005: Supervise the Maintenance and Repair of Mechanical Systems

2. ICE/CON/N1002: Supervise the Electrical Works

3. ICE/CON/N1004: Supervise the Maintenance and Repair of the Plumbing System

4. ICE/CON/N1003: Apply Computer and IT Skills at Work

5. ICE/CON/N1006: Ensure Adherence to Health and Safety Guidelines at Work

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

Options(Not mandatory):

Option : Supervise the use and control of BMS

This unit is about supervising the use and control of the BMS.

1. ICE/CON/N1001: Supervise the Use and Control of BMS

Qualification Pack (QP) Parameters

Sector	Construction
Sub-Sector	Real Estate and Infrastructure Construction

Qualification Pack

Occupation	MEP Supervison - Maintenance
Country	India
NSQF Level	5
Credits	20
Aligned to NCO/ISCO/ISIC Code	NCO-2015/3123.0302 & 3123.0400 & 3122.5600
Minimum Educational Qualification & Experience	2-year Diploma after 12th grade (in any field) (in Civil OR Mechanical OR Electrical) with 1 Year of experience in relevant field OR Completed 3 year diploma after 10th ((in Civil OR Mechanical OR Electrical) with 1.5 years of experience in relevant field OR 12th grade Pass with 3 Years of experience in relevant field OR Previous relevant Qualification of NSQF Level (4.0) with 3 Years of experience in relevant field OR Previous relevant Qualification of NSQF Level (4.5) with 1.5 years of experience in relevant field
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	20 Years
Last Reviewed On	NA
Next Review Date	30/05/2027
NSQC Approval Date	30/05/2024
Version	1.0
Reference code on NQR	QG-05-CO-02636-2024-V1-TICE
NQR Version	1

Qualification Pack

ICE/CON/N1005: Supervise the Maintenance and Repair of Mechanical Systems

Description

This unit is about supervising the maintenance and repair of mechanical systems.

Scope

The scope covers the following :

- Prepare for maintenance and repair work.
- Supervise the maintenance and repair work.

Elements and Performance Criteria

Prepare for maintenance and repair work

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

PC1. inspect the mechanical systems and identify and document any existing issues or potential areas of concern

PC2. review the mechanical drawings, specifications and engineering plans, including HVAC drawings

PC3. conduct site survey to identify any constraints to repair and maintenance work

PC4. develop a maintenance plan outlining regular inspection schedules, preventive maintenance tasks, and a timeline for repairs

PC5. create a maintenance schedule to minimise disruption to building occupants

PC6. schedule and coordinate contractor visits, ensuring they are briefed on the scope of work and building protocols

Supervise the maintenance and repair work

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

PC7. ensure all necessary materials, tools, and equipment are available for the maintenance and repair work

PC8. review safety procedures and ensure all team members are aware of them

PC9. monitor the maintenance or repair work to ensure it is performed according to the maintenance plan and safety standards

PC10. identify and address any unforeseen issues that arise during the repair and maintenance process

PC11. conduct inspection of the completed work to ensure the mechanical systems work correctly

PC12. ensure the repair and maintenance work meets the applicable standards and specifications

PC13. perform functional tests on repaired or maintained systems to ensure they are working as intended.

PC14. implement improvements to enhance efficiency, safety, and reliability of mechanical systems

PC15. maintain detailed records of all maintenance and repair activities

PC16. provide reports to the building owner/ management, highlighting completed work, and any upgrade recommendations

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the operation, troubleshooting, and maintenance of HVAC systems

KU2. the basics of electrical circuits, control systems, and safety protocols

KU3. how to read mechanical drawings, specifications and engineering plans, including HVAC drawings

KU4. the structural work required in a building for carrying out MEP work

KU5. how to read building Structural drawings

KU6. the process of developing and implementing a maintenance plan for mechanical systems

KU7. the appropriate maintenance schedule for mechanical systems

KU8. the maintenance of fire protection systems

KU9. the maintenance and safety inspections of elevators and escalators

KU10. how to diagnose and troubleshoot mechanical issues

KU11. the repair methods and techniques relevant to mechanical systems

KU12. the interaction of mechanical systems with electrical systems

KU13. the routine maintenance of mechanical systems to prevent breakdowns

KU14. the operation and maintenance of heavy-duty machines used in mechanical works

KU15. the materials, tools and equipment used in the maintenance and repair of mechanical systems

KU16. the applicable occupational health and safety regulations, including the implementation of safety protocols

KU17. the applicable building codes

KU18. how to plan and schedule maintenance tasks efficiently

KU19. resource management, including manpower, materials, and budgets

KU20. the applicable quality control procedures to ensure the quality of repairs and maintenance work meets the relevant standards

KU21. the applicable records-maintenance requirements

Generic Skills (GS)

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

GS1. maintain the appropriate data and records

GS2. read the appropriate reports and literature concerning the field of work

GS3. communicate professionally with all the stakeholders

GS4. listen attentively to understand the information/ instructions being shared and take appropriate action

GS5. coordinate with the co-workers to achieve the work objectives

GS6. identify possible disruptions to work and take appropriate mitigation measures

GS7. take prompt action to deal with workplace emergencies and accidents

GS8. evaluate all possible solutions to work-related problems and select the best one

GS9. follow the recommended practices for the timely completion of work and achievement of organizational objectives

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Prepare for maintenance and repair work	**14**	**20**	**-**	**8**
PC1. inspect the mechanical systems and identify and document any existing issues or potential areas of concern	-	-	-	-
PC2. review the mechanical drawings, specifications and engineering plans, including HVAC drawings	-	-	-	-
PC3. conduct site survey to identify any constraints to repair and maintenance work	-	-	-	-
PC4. develop a maintenance plan outlining regular inspection schedules, preventive maintenance tasks, and a timeline for repairs	-	-	-	-
PC5. create a maintenance schedule to minimise disruption to building occupants	-	-	-	-
PC6. schedule and coordinate contractor visits, ensuring they are briefed on the scope of work and building protocols	-	-	-	-
Supervise the maintenance and repair work	**16**	**30**	**-**	**12**
PC7. ensure all necessary materials, tools, and equipment are available for the maintenance and repair work	-	-	-	-
PC8. review safety procedures and ensure all team members are aware of them	-	-	-	-
PC9. monitor the maintenance or repair work to ensure it is performed according to the maintenance plan and safety standards	-	-	-	-
PC10. identify and address any unforeseen issues that arise during the repair and maintenance process	-	-	-	-
PC11. conduct inspection of the completed work to ensure the mechanical systems work correctly	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. ensure the repair and maintenance work meets the applicable standards and specifications	-	-	-	-
PC13. perform functional tests on repaired or maintained systems to ensure they are working as intended.	-	-	-	-
PC14. implement improvements to enhance efficiency, safety, and reliability of mechanical systems	-	-	-	-
PC15. maintain detailed records of all maintenance and repair activities	-	-	-	-
PC16. provide reports to the building owner/ management, highlighting completed work, and any upgrade recommendations	-	-	-	-
NOS Total	**30**	**50**	**-**	**20**

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ICE/CON/N1005
NOS Name	Supervise the Maintenance and Repair of Mechanical Systems
Sector	Construction
Sub-Sector	
Occupation	MEP Supervison - Maintenance
NSQF Level	5
Credits	4
Version	1.0
Last Reviewed Date	30/05/2024
Next Review Date	30/05/2027
NSQC Clearance Date	30/05/2024

ICE/CON/N1002: Supervise the Electrical Works

Description

This unit is about supervising the electrical works to ensure they are carried out as per the applicable safety and quality standards.

Scope

The scope covers the following :

- Arrange the appropriate tools and equipment
- Supervise the use of tools and equipment
- Check the electrical material components and fixtures
- Supervise the maintenance of HVAC equipment
- Inspect the generator operation
- Supervise the maintenance of generators
- Supervise electrical maintenance and repairs
- Supervise conduit laying and LV wiring processes

Elements and Performance Criteria

Arrange the appropriate tools and equipment

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

PC1. ensure the availability of appropriate tools and equipment, e.g. electrical measuring device and multimeter based on the work requirements

PC2. supervise appropriate checks on the equipment to ensure their correct functioning and usability

PC3. direct the relevant workers to carry out appropriate troubleshooting for any issues identified with the tools and equipment

Supervise the use of tools and equipment

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

PC4. ensure the use of appropriate tools and equipment to examine electrical units in power interruptions/ continuity and trace short circuits/faults and leakages in the electrical wiring

PC5. direct the workers to measure the size and dimension of wires and conduits using the appropriate tools

PC6. check for the use of proper tools to cut and bend wires and conduits

PC7. direct the workers to splice wires by stripping insulation from terminal leads and twisting wires together with the help of relevant tools

PC8. ensure proper threading of conduit ends as per the standard procedure

PC9. instruct the workers to connect couplings and fabricate and secure conduit support brackets using the appropriate tools

PC10. supervise the use of digital ammeter, multimeter, tong tester, earth tester or similar devices for the repair of power connections

Check the electrical material components and fixtures

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

PC11. ensure the use of appropriate cables, conduits, lights, sockets, temporary power distribution panels and other required fixtures and accessories for repairs

PC12. use lights with appropriate illumination to replace the faulty lights

PC13. ensure the use of relevant accessories, brackets, bulkheads, screws and bolts for fixing lights

PC14. instruct the workers to lay cables through ducts or conduits, pull wires through conduit leading to connection boxes, temporary panels/ distribution boards or other temporary electrical terminals

PC15. check for the splicing of cables together using secured joints, i.e. PVC insulation tapes, caps, etc.

PC16. direct the workers to terminate Low-Voltage (LV) cables and tag embedded, exposed electrical lines and other key equipment appropriately

Supervise the maintenance of HVAC equipment

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

PC17. check the components of the critical HVAC system for the correct functioning

PC18. ensure the workers understand the mechanical drawings for HVAC equipment

PC19. inspect the compressor for appropriate functioning and identify the common problems arising from the failure of the compressor

PC20. ensure the applicable procedures and checklists are followed for the preventive, predictive and corrective maintenance of the HVAC equipment/system

PC21. check for the functionality of various control components, such as the thermostat, time delay relay, solenoid valves, relays and contactors

PC22. check for the functionality of various control components such as the thermostat, time delay relay, solenoid valves, relays and contactors

PC23. analyse circuit diagrams to determine the operating sequence of micro-processor-controlled systems

Inspect the generator operation

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

PC24. monitor the Diesel Generator (DG) parts and their parameters, such as daily panel reading, battery charging current, specific gravity terminal connection, diesel level, oil level, coolant level and air cleaner of the DG

PC25. implement the appropriate safety measures to mitigate the operational hazard concerning a DG

PC26. identify the electrical hazards associated with automatic transfer switch, bad wiring connections, DC batteries (24-to-30-volt DC), generator voltage (415 VAC) and implement appropriate preventive measures

PC27. identify the chemical hazards associated with the battery, diesel, and engine oil, and implement appropriate preventive measures

PC28. identify the mechanical and thermal hazards associated with diesel engines (moving parts) hot exhaust, mufflers, engine surface eye hazard, and battery wash splash, and implement appropriate preventive measures

PC29. identify the air hazard and symptoms of carbon monoxide poisoning, and implement appropriate preventive and remedial measures

PC30. ensure the appropriate procedure of starting and stopping DG is followed

PC31. identify the fire hazards and implement the appropriate fire safety measures

PC32. inspect the regulation of the flow of power from the generator to the connecting load to match the phase sequence, frequency and voltage

Supervise the maintenance of generators

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

PC33. monitor and map the performance of diesel generators

PC34. identify the problems associated with the operation of DG and ensure their resolution within the specified time

PC35. check for the use of appropriate spares and tools for the maintenance work

PC36. implement the standard procedure for the Planned Preventative Maintenance (PPM) of the DG to reduce breakdowns

Supervise electrical maintenance and repairs

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

PC37. ensure the safety of live cable connections

PC38. instruct the workers to shift light arrangements as per the requirement safely, disconnecting the live parts

PC39. inspect the repair and replacement of light arrangements through relevant tests to trace out power interruptions

PC40. direct the workers to carry out maintenance by replacing/repairing installed electrical components

PC41. supervise the maintenance and replacement of faulty cables, bulbs/tubes, wires, electrical switches, faulty electrical equipment etc.

PC42. inspect the necessary tests to shut down, deactivate or repair

PC43. ensure the replacement and repair of faulty components as per SLD instruction

PC44. ensure safe isolation and shifting of the panel to another location as and when necessary

PC45. carry out necessary documentation, keeping records relevant to maintenance of panels as per organizational norms

Supervise conduit laying and LV wiring processes

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

PC46. conduct a thorough assessment of the electrical system to identify the areas needing repair or rewiring

PC47. determine the scope of work, including the type and quantity of conduits and LV wiring required.

PC48. develop a detailed plan outlining the conduiting and wiring routes

PC49. select appropriate conduit types ensuring their correct size to accommodate the wiring without overcrowding

PC50. select the appropriate type and gauge of LV wiring

PC51. check the wiring meets the required specifications for the intended use

PC52. ensure the power is turned off to the work area

PC53. implement lockout/tagout procedures to prevent accidental energization

PC54. ensure the conduit runs according to the planned routes

PC55. monitor bending of conduits to allow them fit around corners and obstacles

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PC56. ensure conduits are secured to walls, ceilings, or other surfaces using appropriate clamps and brackets

PC57. supervise the labelling and terminating of wires as per the applicable standards

PC58. perform continuity tests to verify that the wiring is intact and correctly routed.

PC59. test the LV systems to ensure they operate correctly

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. how electricity works

KU2. different types of materials, e.g. conductors, insulators, and semiconductors

KU3. the concepts of current, potential difference, Electromotive force (EMF)

KU4. ohms law, resistance, series and parallel

KU5. ohms law practical

KU6. voltage drop in the circuit, voltage divider rule, series and parallel

KU7. circuit connections

KU8. electrical work, power & energy

KU9. the measurement of voltage, current, power and energy

KU10. effects of electric current - heating, magnetic, chemical, etc.

KU11. voltage and current

KU12. the effects of electric current

KU13. the difference between AC and DC

KU14. the advantages of AC over DC

KU15. the sinusoidal wave

KU16. the concept of resistance, capacitance and inductance

KU17. the difference between R-L, R-C, and R-L-C series circuits

KU18. the concept of active, reactive, and apparent power

KU19. the power factor and improvement

KU20. the power triangle

KU21. the principle of 3-phase EMF generation and its waveform

KU22. the concept of load balancing

KU23. the electricity supply system and utilization

KU24. the electricity generation and transmission

KU25. the tariff concept, utilization and electricity bill calculation

KU26. the importance and functioning of a power plant

KU27. the use of different electrical symbols as per rules

KU28. the design of simple electric circuits

KU29. the use of parallel circuits and master-switch circuits

KU30. the procedure of laying electrical wiring as per the drawing

KU31. the meaning and use of different MEP Symbols

KU32. the use of appropriate tools and equipment for electrical works

KU33. the selection of appropriate wire size according to project requirements

KU34. the preparation of electrical diagrams using standard electrical circuit symbols

KU35. the observation of standard components

KU36. how to read and interpret electrical installation drawings

KU37. lamp circuits -Simple electric circuits, 1 lamp by 1 switch, etc.

KU38. the procedure of godown and staircase wiring

KU39. different types of light fixtures, e.g. direct, semi-direct and indirect

KU40. the installation of light fittings

KU41. general and factory lighting

KU42. the procedure of diffusing fittings

KU43. the use of concentrating reflectors

KU44. different types of pumps and their operations

KU45. different types of motors and motor starting connections

KU46. the functioning and types of transformers

KU47. the wiring and parts of a transformer, and their functions

KU48. the transformer cooling system

KU49. the functioning of breakers, substation equipment, electrical panels and distribution Boards (DB)

KU50. the use of Automatic Power Factor Control (APFC) Panel

KU51. the basic electronics

KU52. the basic electronic components and circuits

KU53. the use of electronic circuit diagrams

KU54. the basic low-voltage systems, such as TV, telephone, etc.

KU55. the use of the Internet, intercom and security systems

KU56. the functioning of fire sensors

KU57. the rules of electronic connections

KU58. the use of batteries and cells

KU59. the current capacity and rating of a battery

KU60. the working and connections of inverters and UPS

KU61. the use of generators in residences, malls and hotels

KU62. the operation and maintenance of electrical control panels

KU63. basic Mathematics - Percentage, Probability, Ratio, Proportion, Geometry, Histogram and Graphs

KU64. basic Physics -Speed, Acceleration, Force, Newton's Law, Power, and Temperature

KU65. physical quantities, units and conversions

KU66. the application of mathematics and physics in electrical works, e.g. calculation of power requirement

KU67. the Indian Electricity (IE) rules for domestic and industrial wiring

KU68. different methods of wiring

KU69. the types and usage of wires and cables

KU70. the types and sizes of wires and cables for connection

KU71. the appropriate cabling and earthing as per IE rules

KU72. different wiring accessories

KU73. different types of conduiting

KU74. different conduit pipe wiring materials

KU75. the advantages and disadvantages of concealed conduiting

KU76. the necessity of fuses, circuit breakers, rating MCB, ELCB, relays, etc.

Generic Skills (GS)

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

GS1. maintain the appropriate data and records

GS2. read the appropriate reports and literature concerning the field of work

GS3. communicate professionally with all the stakeholders

GS4. listen attentively to understand the information/ instructions being shared and take appropriate action

GS5. coordinate with the co-workers to achieve the work objectives

GS6. identify possible disruptions to work and take appropriate mitigation measures

GS7. take prompt action to deal with workplace emergencies and accidents

GS8. evaluate all possible solutions to work-related problems and select the best one

GS9. follow the recommended practices for the timely completion of work and achievement of organizational objectives

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Arrange the appropriate tools and equipment	**2**	**7**	**-**	**2**
PC1. ensure the availability of appropriate tools and equipment, e.g. electrical measuring device and multimeter based on the work requirements	-	-	-	-
PC2. supervise appropriate checks on the equipment to ensure their correct functioning and usability	-	-	-	-
PC3. direct the relevant workers to carry out appropriate troubleshooting for any issues identified with the tools and equipment	-	-	-	-
Supervise the use of tools and equipment	**4**	**9**	**-**	**3**
PC4. ensure the use of appropriate tools and equipment to examine electrical units in power interruptions/ continuity and trace short circuits/faults and leakages in the electrical wiring	-	-	-	-
PC5. direct the workers to measure the size and dimension of wires and conduits using the appropriate tools	-	-	-	-
PC6. check for the use of proper tools to cut and bend wires and conduits	-	-	-	-
PC7. direct the workers to splice wires by stripping insulation from terminal leads and twisting wires together with the help of relevant tools	-	-	-	-
PC8. ensure proper threading of conduit ends as per the standard procedure	-	-	-	-
PC9. instruct the workers to connect couplings and fabricate and secure conduit support brackets using the appropriate tools	-	-	-	-
PC10. supervise the use of digital ammeter, multimeter, tong tester, earth tester or similar devices for the repair of power connections	-	-	-	-
Check the electrical material components and fixtures	**4**	**7**	**-**	**3**

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. ensure the use of appropriate cables, conduits, lights, sockets, temporary power distribution panels and other required fixtures and accessories for repairs	-	-	-	-
PC12. use lights with appropriate illumination to replace the faulty lights	-	-	-	-
PC13. ensure the use of relevant accessories, brackets, bulkheads, screws and bolts for fixing lights	-	-	-	-
PC14. instruct the workers to lay cables through ducts or conduits, pull wires through conduit leading to connection boxes, temporary panels/ distribution boards or other temporary electrical terminals	-	-	-	-
PC15. check for the splicing of cables together using secured joints, i.e. PVC insulation tapes, caps, etc.	-	-	-	-
PC16. direct the workers to terminate Low-Voltage (LV) cables and tag embedded, exposed electrical lines and other key equipment appropriately	-	-	-	-
Supervise the maintenance of HVAC equipment	**6**	**7**	**-**	**2**
PC17. check the components of the critical HVAC system for the correct functioning	-	-	-	-
PC18. ensure the workers understand the mechanical drawings for HVAC equipment	-	-	-	-
PC19. inspect the compressor for appropriate functioning and identify the common problems arising from the failure of the compressor	-	-	-	-
PC20. ensure the applicable procedures and checklists are followed for the preventive, predictive and corrective maintenance of the HVAC equipment/system	-	-	-	-
PC21. check for the functionality of various control components, such as the thermostat, time delay relay, solenoid valves, relays and contactors	-	-	-	-
PC22. check for the functionality of various control components such as the thermostat, time delay relay, solenoid valves, relays and contactors	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC23. analyse circuit diagrams to determine the operating sequence of micro-processor-controlled systems	-	-	-	-
Inspect the generator operation	**4**	**5**	**-**	**2**
PC24. monitor the Diesel Generator (DG) parts and their parameters, such as daily panel reading, battery charging current, specific gravity terminal connection, diesel level, oil level, coolant level and air cleaner of the DG	-	-	-	-
PC25. implement the appropriate safety measures to mitigate the operational hazard concerning a DG	-	-	-	-
PC26. identify the electrical hazards associated with automatic transfer switch, bad wiring connections, DC batteries (24-to-30-volt DC), generator voltage (415 VAC) and implement appropriate preventive measures	-	-	-	-
PC27. identify the chemical hazards associated with the battery, diesel, and engine oil, and implement appropriate preventive measures	-	-	-	-
PC28. identify the mechanical and thermal hazards associated with diesel engines (moving parts) hot exhaust, mufflers, engine surface eye hazard, and battery wash splash, and implement appropriate preventive measures	-	-	-	-
PC29. identify the air hazard and symptoms of carbon monoxide poisoning, and implement appropriate preventive and remedial measures	-	-	-	-
PC30. ensure the appropriate procedure of starting and stopping DG is followed	-	-	-	-
PC31. identify the fire hazards and implement the appropriate fire safety measures	-	-	-	-
PC32. inspect the regulation of the flow of power from the generator to the connecting load to match the phase sequence, frequency and voltage	-	-	-	-
Supervise the maintenance of generators	**2**	**4**	**-**	**3**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC33. monitor and map the performance of diesel generators	-	-	-	-
PC34. identify the problems associated with the operation of DG and ensure their resolution within the specified time	-	-	-	-
PC35. check for the use of appropriate spares and tools for the maintenance work	-	-	-	-
PC36. implement the standard procedure for the Planned Preventative Maintenance (PPM) of the DG to reduce breakdowns	-	-	-	-
Supervise electrical maintenance and repairs	**3**	**5**	**-**	**2**
PC37. ensure the safety of live cable connections	-	-	-	-
PC38. instruct the workers to shift light arrangements as per the requirement safely, disconnecting the live parts	-	-	-	-
PC39. inspect the repair and replacement of light arrangements through relevant tests to trace out power interruptions	-	-	-	-
PC40. direct the workers to carry out maintenance by replacing/repairing installed electrical components	-	-	-	-
PC41. supervise the maintenance and replacement of faulty cables, bulbs/tubes, wires, electrical switches, faulty electrical equipment etc.	-	-	-	-
PC42. inspect the necessary tests to shut down, deactivate or repair	-	-	-	-
PC43. ensure the replacement and repair of faulty components as per SLD instruction	-	-	-	-
PC44. ensure safe isolation and shifting of the panel to another location as and when necessary	-	-	-	-
PC45. carry out necessary documentation, keeping records relevant to maintenance of panels as per organizational norms	-	-	-	-
Supervise conduit laying and LV wiring processes	**5**	**6**	**-**	**3**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC46. conduct a thorough assessment of the electrical system to identify the areas needing repair or rewiring	-	-	-	-
PC47. determine the scope of work, including the type and quantity of conduits and LV wiring required.	-	-	-	-
PC48. develop a detailed plan outlining the conduiting and wiring routes	-	-	-	-
PC49. select appropriate conduit types ensuring their correct size to accommodate the wiring without overcrowding	-	-	-	-
PC50. select the appropriate type and gauge of LV wiring	-	-	-	-
PC51. check the wiring meets the required specifications for the intended use	-	-	-	-
PC52. ensure the power is turned off to the work area	-	-	-	-
PC53. implement lockout/tagout procedures to prevent accidental energization	-	-	-	-
PC54. ensure the conduit runs according to the planned routes	-	-	-	-
PC55. monitor bending of conduits to allow them fit around corners and obstacles	-	-	-	-
PC56. ensure conduits are secured to walls, ceilings, or other surfaces using appropriate clamps and brackets	-	-	-	-
PC57. supervise the labelling and terminating of wires as per the applicable standards	-	-	-	-
PC58. perform continuity tests to verify that the wiring is intact and correctly routed.	-	-	-	-
PC59. test the LV systems to ensure they operate correctly	-	-	-	-
NOS Total	**30**	**50**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	ICE/CON/N1002
NOS Name	Supervise the Electrical Works
Sector	Construction
Sub-Sector	
Occupation	MEP Supervison - Maintenance
NSQF Level	5
Credits	5
Version	1.0
Last Reviewed Date	30/05/2024
Next Review Date	30/05/2027
NSQC Clearance Date	30/05/2024

ICE/CON/N1004: Supervise the Maintenance and Repair of the Plumbing System

Description

This unit is about supervising the plumbing work and maintenance of the plumbing system.

Scope

The scope covers the following :

- Plan the plumbing maintenance and repair tasks
- Supervise the maintenance and repair tasks

Elements and Performance Criteria

Plan the plumbing maintenance and repair tasks

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

PC1. inspect the plumbing system to identify any existing issues, potential problem areas, and necessary maintenance tasks

PC2. analyse the plumbing system drawings to plan the maintenance and repair activities

PC3. document the condition of pipes, fixtures, valves, and other components

PC4. develop a maintenance plan outlining regular inspection schedules, preventive maintenance tasks, and a timeline for repairs

PC5. ensure the availability of appropriate materials, tools and equipment for maintenance and repair of plumbing systems

Supervise the maintenance and repair tasks

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

PC6. check the plumbing system to identify potential problems/faults and their cause

PC7. implement the appropriate sequence for the repair of the plumbing system

PC8. supervise the assembling of fitting and fixtures and appropriate tools required for different plumbing tasks

PC9. locate and mark the position of the component to be replaced/repaired, using measuring instruments such as rulers and levels

PC10. direct the workers to cut openings in structures to remove defective pipes and pipe fittings, using the appropriate hand and power tools

PC11. ensure the replacement of faulty pipe assemblies, fittings, valves, appliances such as dishwashers/water heaters, and fixtures such as sinks and toilets with the new ones using the appropriate hand and power tools

PC12. test the joints and fixtures for the proper functioning

PC13. implement appropriate measures to prevent water leakage

PC14. supervise various activities for the maintenance of the plumbing system, e.g. installing water service lines, connecting with the main line, fixing leaky pipes, repairing/ replacing broken water pipes, repairing/replacing leaky taps, replacing blocked pipes, etc.

PC15. ensure the plumbing tasks are performed within the applicable durations

PC16. implement the appropriate measures to achieve quality finishing in the repair of sanitary fixtures and fittings

PC17. ensure minimal wastage of material and minimal damage to other systems

PC18. instruct the workers to clean the plumbing work area after work and dispose of waste safely, following the applicable waste management practices

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. how to read and interpret plumbing drawings

KU2. different types of pipes and pipe materials

KU3. different types of pipe joints

KU4. different types of taps and valves

KU5. the piping layout

KU6. the placement and installation of pipe assemblies

KU7. the cutting, threading and bending procedures

KU8. sanitary and kitchenware

KU9. the regular maintenance of plumbing systems

KU10. the preparation of the plumbing system repair sequence

KU11. the assessment/ inspection and rectification of faults in the plumbing system, e.g. clearing choked pipes and blockages

KU12. how to identify the leakage in the premises and the use of appropriate hardware for the identification of active leak and passive leak

KU13. the selection and use of appropriate plumbing tools, equipment and accessories

KU14. how to assemble different types of pipe sections, tubings and fittings

KU15. how to plan and carry out plumbing work around obstructions

KU16. the procedure of checking the plumbing system to identify faults

KU17. various activities carried out for the maintenance of the plumbing system, e.g. installing water service lines, connecting with the main line, fixing leaky pipes, repairing/ replacing broken water pipes, repairing/replacing leaky taps, replacing blocked pipes, etc.

KU18. the practices for effective vendor management and communication

KU19. different types of tests conducted on plumbing systems, including tests on joints and fixtures

KU20. the operation of effluent/waste treatment plant, including waste water

KU21. the Sewage Treatment Plant (STP) Reverse Osmosis (RO) plant principle

KU22. the operation of the sewage treatment plant and drainage system

KU23. the water testing and safety standards

KU24. the water tank cleaning process

KU25. the operation of the hydro-pneumatic system

KU26. the operation and maintenance of control panels for plumbing systems

KU27. the use and maintenance of different types of pumps

KU28. the process of pumping water using water pumps

Generic Skills (GS)

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

GS1. maintain the appropriate data and records

GS2. read the appropriate reports and literature concerning the field of work

GS3. communicate professionally with all the stakeholders

GS4. listen attentively to understand the information/ instructions being shared and take appropriate action

GS5. coordinate with the co-workers to achieve the work objectives

GS6. identify possible disruptions to work and take appropriate mitigation measures

GS7. take prompt action to deal with workplace emergencies and accidents

GS8. evaluate all possible solutions to work-related problems and select the best one

GS9. follow the recommended practices for the timely completion of work and achievement of organizational objectives

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Plan the plumbing maintenance and repair tasks	**16**	**25**	**-**	**9**
PC1. inspect the plumbing system to identify any existing issues, potential problem areas, and necessary maintenance tasks	-	-	-	-
PC2. analyse the plumbing system drawings to plan the maintenance and repair activities	-	-	-	-
PC3. document the condition of pipes, fixtures, valves, and other components	-	-	-	-
PC4. develop a maintenance plan outlining regular inspection schedules, preventive maintenance tasks, and a timeline for repairs	-	-	-	-
PC5. ensure the availability of appropriate materials, tools and equipment for maintenance and repair of plumbing systems	-	-	-	-
Supervise the maintenance and repair tasks	**14**	**25**	**-**	**11**
PC6. check the plumbing system to identify potential problems/faults and their cause	-	-	-	-
PC7. implement the appropriate sequence for the repair of the plumbing system	-	-	-	-
PC8. supervise the assembling of fitting and fixtures and appropriate tools required for different plumbing tasks	-	-	-	-
PC9. locate and mark the position of the component to be replaced/repaired, using measuring instruments such as rulers and levels	-	-	-	-
PC10. direct the workers to cut openings in structures to remove defective pipes and pipe fittings, using the appropriate hand and power tools	-	-	-	-
PC11. ensure the replacement of faulty pipe assemblies, fittings, valves, appliances such as dishwashers/water heaters, and fixtures such as sinks and toilets with the new ones using the appropriate hand and power tools	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. test the joints and fixtures for the proper functioning	-	-	-	-
PC13. implement appropriate measures to prevent water leakage	-	-	-	-
PC14. supervise various activities for the maintenance of the plumbing system, e.g. installing water service lines, connecting with the main line, fixing leaky pipes, repairing/ replacing broken water pipes, repairing/replacing leaky taps, replacing blocked pipes, etc.	-	-	-	-
PC15. ensure the plumbing tasks are performed within the applicable durations	-	-	-	-
PC16. implement the appropriate measures to achieve quality finishing in the repair of sanitary fixtures and fittings	-	-	-	-
PC17. ensure minimal wastage of material and minimal damage to other systems	-	-	-	-
PC18. instruct the workers to clean the plumbing work area after work and dispose of waste safely, following the applicable waste management practices	-	-	-	-
NOS Total	**30**	**50**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	ICE/CON/N1004
NOS Name	Supervise the Maintenance and Repair of the Plumbing System
Sector	Construction
Sub-Sector	
Occupation	MEP Supervison - Maintenance
NSQF Level	5
Credits	4
Version	1.0
Last Reviewed Date	30/05/2024
Next Review Date	30/05/2027
NSQC Clearance Date	30/05/2024

ICE/CON/N1003: Apply Computer and IT Skills at Work

Description

This unit is about applying computer and Information Technology (IT) skills in work, e.g., using different computer applications

Scope

The scope covers the following :

- Use the appropriate operating system
- Use the Internet
- Use Microsoft Word
- Use Microsoft Excel
- Use Microsoft PowerPoint
- Undertake computer networking
- Undertake e-commerce

Elements and Performance Criteria

Use the appropriate operating system

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

PC1. use different types of Operating Systems (OS)

PC2. compare and select the appropriate type of OS, Network OS and their features

PC3. add/remove programs on the computer

PC4. access and use - My computer, Display properties, My Documents, and My Network Places on the computer

Use the Internet

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

PC5. follow the appropriate procedure to connect the computer to the Internet

PC6. access the Internet on the computer using the appropriate browser and applications

PC7. search/surf the Internet, accessing different sites for information and downloading

PC8. create a personalized email account using the appropriate email service

PC9. use email services to exchange emails with other email users

PC10. chat with others through text and voice chat

PC11. use official WhatsApp groups and follow chat etiquette

PC12. register on different social media platforms and use them to connect with other social media users

Use Microsoft Word

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

PC13. create and save documents in MS Word following the applicable procedure

PC14. format the text with different font size and font styles

PC15. use different images, symbols etc., to enhance the quality of MS Word content

PC16. set up different page sizes and orientations in MS Word

PC17. check spelling and grammar in MS Word to identify and remove grammatical and spelling errors

PC18. use Mail Merge to produce multiple letters, labels, envelopes, name tags, etc., using information stored in a list, database, or spreadsheet

PC19. create different types of documents using templates in MS Word, e.g. Biodata, letters, project reports, etc.

PC20. print MS Word documents with the correct orientation, following the applicable procedure

Use Microsoft Excel

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

PC21. create and save worksheets

PC22. edit and format worksheets

PC23. use formulas and functions, and insert charts and worksheets, as required

PC24. use data options in worksheets

PC25. create worksheets with images, and numbers and print them with different formatting effects

Use Microsoft PowerPoint

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

PC26. create slides of different types, e.g. running presentations

PC27. add slide transition effects and animation

PC28. run slide shows and make presentations with audio/visual effects

PC29. print PPT files maintaining the correct orientation

PC30. create PDF format of PPT files

PC31. follow the recommended practices concerning PPT presentations, e.g. the dos and don'ts of MS PPT

Undertake Computer Networking

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

PC32. determine the functions of different networking components

PC33. use different networking components for computer networking

PC34. install the network interface card

PC35. identify the limitations and merits of different network topologies and use them accordingly

Undertake e-commerce

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

PC36. conduct electronic data interchange

PC37. follow the appropriate e-commerce safety measures, e.g. the use of encryption to secure payment information to prevent fraud

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the computer system, hardware and software

KU2. the operating system, system software and application software

KU3.   the basic Windows Explorer operations

KU4.   the basics of MS Word, MS Excel and MS PowerPoint

KU5.   how to create an email account, draft emails and send email attachments

KU6.   the formal documentation and email etiquette

KU7.   the guidelines for chatting for official purposes

KU8.   how to use the Internet to surf the web

KU9.   the use of the keyboard, printer, monitor scanner, webcam, microphone, speaker

KU10.   the sample collection of various types of storage devices, specifications and charts

KU11.   the basic use of Microsoft (MS) Windows operating system

KU12.   the development and growth of MS Windows

KU13.   the features, merits and demerits of MS Windows

KU14.   the virtual or animated installation of MS Windows

KU15.   the MS Windows NT features, merits and demerits

KU16.   the system requirements for various operating systems

KU17.   Windows default icons and their applications

KU18.   how to add/remove programs

KU19.   the use of My Computer, Display properties, My documents, My Network places

KU20.   the Internet and its applications

KU21.   how to connect the Ethernet cable and access the Internet

KU22.   computer networking

KU23.   the requirements/ applications of networking

KU24.   the use of different networking components in computer networking

KU25.   the server/ client concept

KU26.   the definition and scope of e-commerce

KU27.   the concept of trade cycle in e-commerce

KU28.   electronic market as an inter-organizational information system

KU29.   the computer-to-computer exchange of business documents in a standard electronic format between business partners through Electronic Data Interchange (EDI)

KU30.   Internet Commerce, Security Issues, Encryption

KU31.   payment systems and how online payment system works

KU32.   the limitations of e-Commerce

KU33.   the trade cycle and electronic markets

KU34.   the IT ticket logging and handling procedure

Generic Skills (GS)

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

GS1.   maintain the appropriate data and records

GS2.   read the appropriate reports and literature concerning the field of work

GS3.   communicate professionally with all the stakeholders

GS4. listen attentively to understand the information/ instructions being shared and take appropriate action

GS5. coordinate with the co-workers to achieve the work objectives

GS6. identify possible disruptions to work and take appropriate mitigation measures

GS7. take prompt action to deal with workplace emergencies and accidents

GS8. evaluate all possible solutions to work-related problems and select the best one

GS9. follow the recommended practices for the timely completion of work and achievement of organizational objectives

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Use the appropriate operating system	**3**	**8**	**-**	**2**
PC1. use different types of Operating Systems (OS)	-	-	-	-
PC2. compare and select the appropriate type of OS, Network OS and their features	-	-	-	-
PC3. add/remove programs on the computer	-	-	-	-
PC4. access and use - My computer, Display properties, My Documents, and My Network Places on the computer	-	-	-	-
Use the Internet	**4**	**11**	**-**	**3**
PC5. follow the appropriate procedure to connect the computer to the Internet	-	-	-	-
PC6. access the Internet on the computer using the appropriate browser and applications	-	-	-	-
PC7. search/surf the Internet, accessing different sites for information and downloading	-	-	-	-
PC8. create a personalized email account using the appropriate email service	-	-	-	-
PC9. use email services to exchange emails with other email users	-	-	-	-
PC10. chat with others through text and voice chat	-	-	-	-
PC11. use official WhatsApp groups and follow chat etiquette	-	-	-	-
PC12. register on different social media platforms and use them to connect with other social media users	-	-	-	-
Use Microsoft Word	**5**	**8**	**-**	**3**
PC13. create and save documents in MS Word following the applicable procedure	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. format the text with different font size and font styles	-	-	-	-
PC15. use different images, symbols etc., to enhance the quality of MS Word content	-	-	-	-
PC16. set up different page sizes and orientations in MS Word	-	-	-	-
PC17. check spelling and grammar in MS Word to identify and remove grammatical and spelling errors	-	-	-	-
PC18. use Mail Merge to produce multiple letters, labels, envelopes, name tags, etc., using information stored in a list, database, or spreadsheet	-	-	-	-
PC19. create different types of documents using templates in MS Word, e.g. Biodata, letters, project reports, etc.	-	-	-	-
PC20. print MS Word documents with the correct orientation, following the applicable procedure	-	-	-	-
Use Microsoft Excel	**6**	**7**	**-**	**2**
PC21. create and save worksheets	-	-	-	-
PC22. edit and format worksheets	-	-	-	-
PC23. use formulas and functions, and insert charts and worksheets, as required	-	-	-	-
PC24. use data options in worksheets	-	-	-	-
PC25. create worksheets with images, and numbers and print them with different formatting effects	-	-	-	-
Use Microsoft PowerPoint	**5**	**6**	**-**	**3**
PC26. create slides of different types, e.g. running presentations	-	-	-	-
PC27. add slide transition effects and animation	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC28. run slide shows and make presentations with audio/visual effects	-	-	-	-
PC29. print PPT files maintaining the correct orientation	-	-	-	-
PC30. create PDF format of PPT files	-	-	-	-
PC31. follow the recommended practices concerning PPT presentations, e.g. the dos and don'ts of MS PPT	-	-	-	-
Undertake Computer Networking	**4**	**5**	**-**	**4**
PC32. determine the functions of different networking components	-	-	-	-
PC33. use different networking components for computer networking	-	-	-	-
PC34. install the network interface card	-	-	-	-
PC35. identify the limitations and merits of different network topologies and use them accordingly	-	-	-	-
Undertake e-commerce	**3**	**5**	**-**	**3**
PC36. conduct electronic data interchange	-	-	-	-
PC37. follow the appropriate e-commerce safety measures, e.g. the use of encryption to secure payment information to prevent fraud	-	-	-	-
NOS Total	**30**	**50**	**-**	**20**

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ICE/CON/N1003
NOS Name	Apply Computer and IT Skills at Work
Sector	Construction
Sub-Sector	
Occupation	MEP Supervison - Maintenance
NSQF Level	5
Credits	1
Version	1.0
Last Reviewed Date	30/05/2024
Next Review Date	30/05/2027
NSQC Clearance Date	30/05/2024

ICE/CON/N1006: Ensure Adherence to Health and Safety Guidelines at Work

Description

This unit is about ensuring effective hospitality, health and safety at work

Scope

The scope covers the following :

- Ensure effective hospitality
- Ensure health and safety at work

Elements and Performance Criteria

Ensure effective hospitality

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

PC1. practice appropriate etiquette and disciplined behaviour at work

PC2. use appropriate types of verbal and non-verbal communication at work

PC3. maintain professional and positive body language at work, e.g. appropriate eye contact

PC4. maintain punctuality at work to ensure the timely completion of tasks

PC5. follow the appropriate telephonic etiquette

PC6. maintain a welcoming and positive behaviour with customers, avoiding arguments with them

Ensure health and safety at work

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

PC7. identify different types of hazards and risks in the workplace, e.g. risk of slipping on a wet floor, tripping due to unattended objects, falls, fire hazards, etc.

PC8. follow the appropriate measures to prevent and control fire hazards, and participate in fire drills to ensure personal preparedness to deal with fire emergencies

PC9. check the fire extinguishers for proper functioning and ensure their regular maintenance

PC10. use the appropriate Personal Protective Equipment (PPE) to minimize the safety hazards related to the use of equipment

PC11. follow the organizational procedure to respond to accidents and emergencies, ensuring immediate first-aid for the affected personnel

PC12. maintain and encourage appropriate body posture while lifting, handling and carrying heavy objects to prevent personal injury

PC13. maintain and encourage personal hygiene, such as wearing clean clothes and regular hand-washing

PC14. use and encourage the use of appropriate Personal Protective Equipment (PPE) to ensure personal protection from harmful chemicals and hazardous substances

PC15. ensure the cleanliness of washrooms, including the dryness of the washroom floor to avoid slipping hazard

PC16. implement the appropriate cleaning method, e.g. scrubbing and polishing, for cleaning different types of floors

PC17. ensure the safe use of appropriate cleaning agents and equipment as per the manufacturer's instructions

PC18. ensure timely first aid is administered to the affected personnel

PC19. follow and implement the appropriate procures during health and safety emergencies at work

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. different types of health and safety hazards at work sites

KU2. the procedure for responding to accidents and other emergencies at the site

KU3. use of appropriate Personal Protective Equipment (PPE) based on various working conditions

KU4. the handling of relevant tools, equipment, and materials

KU5. the effect of construction material on health and environment

KU6. various environmental protection methods as per applicability

KU7. the storage of waste including non-combustible scrap material and debris, combustible scrap material and debris, general construction waste and trash (non-toxic,non-hazardous), any other hazardous and flammable wastes at the appropriate location

KU8. how to handle and use hazardous materials safely

KU9. different types of fire

KU10. the procedure of operating different types of fire extinguishers

KU11. housekeeping activities relevant to the task

KU12. different ways of transmission of infection

KU13. ways to manage infections at work

KU14. different methods of cleaning, disinfection, sterilization, and sanitization

KU15. different first aid practices, including Cardiopulmonary Resuscitation (CPR)

KU16. the process of conducting safety assessment at work

KU17. the appropriate emergency safety procedures, e.g. evacuation during fire

KU18. the importance of adhering to work permits

KU19. Integrated Management System (IMS) and the quality policy

KU20. the quality and Environment, Health & Safety (EHS) objectives

KU21. incident reports adherence

KU22. the preparations required for internal/ external audits

KU23. the work instructions and the control numbers assigned

Generic Skills (GS)

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

GS1. maintain the appropriate data and records

GS2. read the appropriate reports and literature concerning the field of work

GS3. communicate professionally with all the stakeholders

GS4. listen attentively to understand the information/ instructions being shared and take appropriate action

GS5. coordinate with the co-workers to achieve the work objectives

GS6. identify possible disruptions to work and take appropriate mitigation measures

GS7. take prompt action to deal with workplace emergencies and accidents

GS8. evaluate all possible solutions to work-related problems and select the best one

GS9. follow the recommended practices for the timely completion of work and achievement of organizational objectives

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Ensure effective hospitality	**14**	**24**	**-**	**12**
PC1. practice appropriate etiquette and disciplined behaviour at work	-	-	-	-
PC2. use appropriate types of verbal and non-verbal communication at work	-	-	-	-
PC3. maintain professional and positive body language at work, e.g. appropriate eye contact	-	-	-	-
PC4. maintain punctuality at work to ensure the timely completion of tasks	-	-	-	-
PC5. follow the appropriate telephonic etiquette	-	-	-	-
PC6. maintain a welcoming and positive behaviour with customers, avoiding arguments with them	-	-	-	-
Ensure health and safety at work	**16**	**26**	**-**	**8**
PC7. identify different types of hazards and risks in the workplace, e.g. risk of slipping on a wet floor, tripping due to unattended objects, falls, fire hazards, etc.	-	-	-	-
PC8. follow the appropriate measures to prevent and control fire hazards, and participate in fire drills to ensure personal preparedness to deal with fire emergencies	-	-	-	-
PC9. check the fire extinguishers for proper functioning and ensure their regular maintenance	-	-	-	-
PC10. use the appropriate Personal Protective Equipment (PPE) to minimize the safety hazards related to the use of equipment	-	-	-	-
PC11. follow the organizational procedure to respond to accidents and emergencies, ensuring immediate first-aid for the affected personnel	-	-	-	-
PC12. maintain and encourage appropriate body posture while lifting, handling and carrying heavy objects to prevent personal injury	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. maintain and encourage personal hygiene, such as wearing clean clothes and regular hand-washing	-	-	-	-
PC14. use and encourage the use of appropriate Personal Protective Equipment (PPE) to ensure personal protection from harmful chemicals and hazardous substances	-	-	-	-
PC15. ensure the cleanliness of washrooms, including the dryness of the washroom floor to avoid slipping hazard	-	-	-	-
PC16. implement the appropriate cleaning method, e.g. scrubbing and polishing, for cleaning different types of floors	-	-	-	-
PC17. ensure the safe use of appropriate cleaning agents and equipment as per the manufacturer's instructions	-	-	-	-
PC18. ensure timely first aid is administered to the affected personnel	-	-	-	-
PC19. follow and implement the appropriate procures during health and safety emergencies at work	-	-	-	-
NOS Total	**30**	**50**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	ICE/CON/N1006
NOS Name	Ensure Adherence to Health and Safety Guidelines at Work
Sector	Construction
Sub-Sector	
Occupation	MEP Supervison - Maintenance
NSQF Level	5
Credits	1
Version	1.0
Last Reviewed Date	30/05/2024
Next Review Date	30/05/2027
NSQC Clearance Date	30/05/2024

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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:

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.

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

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

Logo
Not
Available

GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

NCVET
कौशल गुणवत्ता प्रगति

NSDC
RE>IMAGINE FUTURE

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Introduction to Employability Skills	**1**	**1**	**-**	**-**
PC1. identify employability skills required for jobs in various industries	-	-	-	-
PC2. identify and explore learning and employability portals	-	-	-	-
Constitutional values – Citizenship	**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	-	-	-	-
Becoming a Professional in the 21st Century	**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	-	-	-	-
Basic English Skills	**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	-	-	-	-
Career Development & Goal Setting	**1**	**2**	**-**	**-**

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	-	-	-	-
Communication Skills	**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	-	-	-	-
Diversity & Inclusion	**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	-	-	-	-
Financial and Legal Literacy	**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	-	-	-	-
Essential Digital Skills	**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	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Entrepreneurship	**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	-	-	-	-
Customer Service	**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	-	-	-	-
Getting ready for apprenticeship & Jobs	**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	22/10/2024
Next Review Date	22/10/2027
NSQC Clearance Date	22/10/2024

ICE/CON/N1001: Supervise the Use and Control of BMS

Description

This unit is about supervising the use and control of the BMS.

Scope

The scope covers the following :

- Plan for BMS work
- Monitor and Control the BMS

Elements and Performance Criteria

Plan for BMS work

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

PC1. carry out effective planning using the relevant planning software tools, ensuring time bound

PC2. scheduling and implementing all critical tasks

PC3. assess potential risks that may arise during execution and create effective plans to mitigate

PC4. minimizing the impact on project costs and schedules

PC5. describe various sensors and transducers - automation components in the BMS

PC6. define control panels and communication protocols such as HVAC and Modbus

PC7. describe Fire Alarm System (FAS) and Security Systems in Building Automation

PC8. install sensors in suitable locations for use in BMS systems

PC9. describe controllers use in BMS systems

PC10. use programming blocks diagrams to create Direct Digital Control (DDC) configurations

Monitor and Control the BMS

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

PC11. determine the building automation system and its functioning

PC12. determine the usage and application of access control systems

PC13. supervise the operation and control of the various components, such as the power supply systems, locks, alarms, etc.

PC14. use the appropriate software for monitoring the building automation system

PC15. diagnose battery problems using a multi-meter, deal with incidents and record them

PC16. ensure the use of CCTV systems, fire alarms and firefighting systems as per the standard procedure

PC17. identify the types and components of the camera, fire alarm system and its elements and record the analogue and digital footage

PC18. check the condition of cables, connectors and batteries in the fire alarm system

PC19. check for the correct working of different functions of the fire alarm system such as silence, reset, fire drill, faults, logs, working and types of sprinklers, etc.

PC20. check the time, date, detector sensitivity, firefighting system, alarm sensors, etc., in the fire alarm system

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the importance of Building Maintenance System

KU2. different types of facilities

KU3. different components of BMS

KU4. the engineering and organizational chart

KU5. the duties and responsibilities of a BMS Supervisor

KU6. the benefits of building automation

KU7. the use of hardware and software System Controllers

KU8. the importance and applications of sensors and actuators in BIM

KU9. the domestic network and device interconnection

KU10. how to control lighting, audio, video, acoustics, fire Alarm, firefighting system and CCTV in BIM

KU11. fire detection and fighting system maintenance

KU12. the water sprinkler system - design of fire hydrant and sprinkler

KU13. the maintenance, fault finding and repairs of fire detection, control circuits and sprinkl

KU14. the firefighting water force equipment

KU15. the maintenance of firefighting pumps

KU16. the benefits and functioning of the Access Control System

KU17. the handing/ taking over process for the access control system

KU18. the installation and maintenance of different types of CCTV systems

KU19. the operation of DVR system and its syncing with CCTV

KU20. the interior guidelines and enforcement of the same

KU21. documentation adherence/ familiarization with IP Multimedia System (IMS)

KU22. stores and material management and updation in registers

KU23. monitoring of AMCs and the SLA for every AMC

KU24. the establish and implement escalation matrix

KU25. how to monitor and control the BMS

KU26. the use of various hand and power tools

KU27. the basics of refrigeration and Heating, Ventilation, and Air Conditioning (HVAC)

KU28. different types of HVAC systems

KU29. the working cycles of HVAC

KU30. the functions of different components of HVAC

KU31. the functions of compressor, condenser, evaporator, and refrigerants

KU32. the handling and replacement of refrigerant

KU33. the inspection and breakdown maintenance of HVAC equipment

KU34. the functioning, inspection and breakdown maintenance of AC and DC generators

KU35. the working principle of lifts and elevators

KU36. the inspection, maintenance and fault finding of lifts and elevators

KU37. the monitoring of lift and elevator service report

KU38. the use of different measurement equipment for taking different types of measurements

KU39. the standards and systems associated with the use and maintenance of hand and power tools and equipment

Generic Skills (GS)

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

GS1. maintain the appropriate data and records

GS2. read the appropriate reports and literature concerning the field of work

GS3. communicate professionally with all the stakeholders

GS4. listen attentively to understand the information/ instructions being shared and take appropriate action

GS5. coordinate with the co-workers to achieve the work objectives

GS6. identify possible disruptions to work and take appropriate mitigation measures

GS7. take prompt action to deal with workplace emergencies and accidents

GS8. evaluate all possible solutions to work-related problems and select the best one

GS9. follow the recommended practices for the timely completion of work and achievement of organizational objectives

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Plan for BMS work	**15**	**30**	**-**	**10**
PC1. carry out effective planning using the relevant planning software tools, ensuring time bound	-	-	-	-
PC2. scheduling and implementing all critical tasks	-	-	-	-
PC3. assess potential risks that may arise during execution and create effective plans to mitigate	-	-	-	-
PC4. minimizing the impact on project costs and schedules	-	-	-	-
PC5. describe various sensors and transducers - automation components in the BMS	-	-	-	-
PC6. define control panels and communication protocols such as HVAC and Modbus	-	-	-	-
PC7. describe Fire Alarm System (FAS) and Security Systems in Building Automation	-	-	-	-
PC8. install sensors in suitable locations for use in BMS systems	-	-	-	-
PC9. describe controllers use in BMS systems	-	-	-	-
PC10. use programming blocks diagrams to create Direct Digital Control (DDC) configurations	-	-	-	-
Monitor and Control the BMS	**15**	**20**	**-**	**10**
PC11. determine the building automation system and its functioning	-	-	-	-
PC12. determine the usage and application of access control systems	-	-	-	-
PC13. supervise the operation and control of the various components, such as the power supply systems, locks, alarms, etc.	-	-	-	-
PC14. use the appropriate software for monitoring the building automation system	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC15. diagnose battery problems using a multi-meter, deal with incidents and record them	-	-	-	-
PC16. ensure the use of CCTV systems, fire alarms and firefighting systems as per the standard procedure	-	-	-	-
PC17. identify the types and components of the camera, fire alarm system and its elements and record the analogue and digital footage	-	-	-	-
PC18. check the condition of cables, connectors and batteries in the fire alarm system	-	-	-	-
PC19. check for the correct working of different functions of the fire alarm system such as silence, reset, fire drill, faults, logs, working and types of sprinklers, etc.	-	-	-	-
PC20. check the time, date, detector sensitivity, firefighting system, alarm sensors, etc., in the fire alarm system	-	-	-	-
NOS Total	**30**	**50**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	ICE/CON/N1001
NOS Name	Supervise the Use and Control of BMS
Sector	Construction
Sub-Sector	
Occupation	MEP Supervison - Maintenance
NSQF Level	5
Credits	3
Version	1.0
Last Reviewed Date	30/05/2024
Next Review Date	30/05/2027
NSQC Clearance Date	30/05/2024

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. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).

4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.

5. In case of successfully passing only certain number of NOSs, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.

6. 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
ICE/CON/N1005.Supervise the Maintenance and Repair of Mechanical Systems	30	50	0	20	100	30
ICE/CON/N1002.Supervise the Electrical Works	30	50	0	20	100	30
ICE/CON/N1004.Supervise the Maintenance and Repair of the Plumbing System	30	50	0	20	100	20
ICE/CON/N1003.Apply Computer and IT Skills at Work	30	50	0	20	100	5
ICE/CON/N1006.Ensure Adherence to Health and Safety Guidelines at Work	30	50	0	20	100	5
DGT/VSQ/N0102.Employability Skills (60 Hours)	20	30	-	-	50	10
Total	**170**	**280**	**-**	**100**	**550**	**100**

Optional: 1 Supervise the use and control of BMS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
ICE/CON/N1001.Supervise the Use and Control of BMS	30	50	0	20	100	20
Total	**30**	**50**	**-**	**20**	**100**	**20**

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
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NQR	National Qualification Register
OJT	On the Job Training
EMF	Electromotive force
LV	Low-Voltage
AC	Alternating Current
DC	Direct Current
DB	Distribution Boards
APFC	Automatic Power Factor Control
MCB	Miniature Circuit Breaker
ELCB	Earth Leakage Circuit Breaker
CCTV	Closed-Circuit Television
HVAC	Heating, Ventilation, and Air Conditioning

BMS	Building Management System
BIM	Building Information Modelling
NOS	National Occupational Standard(s)
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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.
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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	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	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.
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	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.
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