

Qualification Pack



Excavator Operator

QP Code: IES/Q0103

Version: 3.0

NSQF Level: 4

Infrastructure Equipment Skill Council || Jubilee Building – 2nd Floor, No.45, Museum Road
Bengaluru - 560025



Qualification Pack

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IES/Q0103: Excavator Operator

Brief Job Description

An excavator operator drives and controls the excavator operations the movement and angle of the arm and the equipment. He determines the angle and speed of the movements of the arm and bucket along the vertical axis.

Personal Attributes

This job requires the individual to be extremely careful and diligent and have high level of concentration. Hard work and strong work ethics, courteous behavior with co workers are equally desirable. He should also be physically agile, strong, have good eye sight and not suffer from color-blindness.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [IES/N0107: Carry out pre-operation checks on an excavator](#)
2. [IES/N0108: Operate an excavator](#)
3. [IES/N0109: Perform routine maintenance and troubleshooting of an excavator](#)
4. [IES/N7601: Comply with worksite health and safety](#)
5. [DGT/VSQ/N0101: Employability Skills \(30 Hours\)](#)

Qualification Pack (QP) Parameters

Sector	Infrastructure Equipment
Sub-Sector	Equipment Operations
Occupation	Operator
Country	India
NSQF Level	4
Credits	14
Aligned to NCO/ISCO/ISIC Code	NCO-2015/ 8342.2001

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Minimum Educational Qualification & Experience	8th grade pass plus 2-year NTC plus 1 Year NAC OR 10th grade pass plus 1-year NTC/ NAC OR 10th grade pass with 2 Years of experience OR 11th grade pass
Minimum Level of Education for Training in School	Not Applicable
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	NA
Next Review Date	17/11/2025
NSQC Approval Date	17/11/2022
Version	3.0
Reference code on NQR	2022/IS/IESC/06792
NQR Version	3.0

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IES/N0107: Carry out pre-operation checks on an excavator

Description

This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that need to be carried out to prepare the excavator for a shift

Scope

The scope covers the following :

- Pre-operation checks.
- Documentation and Reporting

Elements and Performance Criteria

Pre Operation Checks

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

- PC1.** abide with the supervisor's time limitations
- PC2.** check for cracks and wear in the turret and undercarriage
- PC3.** make sure that there is no abnormal wear or cracked teeth in the tracks & sprockets
- PC4.** check for dents and cracks on the welded areas of the boom and the stick
- PC5.** ensure that the oil levels in the engine, radiator coolant, final drive and hydraulic oil and top up, if necessary as per manufacturer's recommendations
- PC6.** check the fan belt tension
- PC7.** set the rear and side mirrors for correct viewing position
- PC8.** check for leaks in the hydraulic hoses and cylinders
- PC9.** carry out inspections to verify that the horn and work lights are in proper working order
- PC10.** check battery electrolyte level and terminal tightness
- PC11.** inspect the different controls, gauges, warning lights, and confirm that all safety and maintenance stickers are present
- PC12.** check and adjust the operator seat, seat belts and set them as per comfort level
- PC13.** check the circle turn gear and clean if required
- PC14.** ensure that the air filter dust bowls are clean, and that the gasket and inner filter are in good condition
- PC15.** check and ensure that all cabin controls including electronic display are functioning properly
- PC16.** drain the water and debris from the fuel tank
- PC17.** make sure that all the pins, bushings and pivot points are properly greased
- PC18.** maintain clean footplates and steps free of mud, dirt and oil
- PC19.** before operation, ensure that no one is beneath or on the machine
- PC20.** maintain a Inspection/maintenance logbook to record all activities performed before starting the excavator
- PC21.** report defects precisely to the supervisor if beyond scope of his role

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Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organization's breakdown and maintenance procedures and guidelines
- KU2.** the company's performance criteria and processes
- KU3.** reporting structure in the company
- KU4.** escalation matrix for reporting unresolved problems
- KU5.** schedule for resolving the complaint / problem
- KU6.** work goal and review mechanism with supervisor for obtaining/giving feedback on performance process
- KU7.** location of tools
- KU8.** contact person in case of queries on procedure or products
- KU9.** location and process for storage and disposal of waste material
- KU10.** safety policy of the company
- KU11.** various types of excavators and their uses and functions
- KU12.** introduction to the engine, hydraulic pump and motors as well as their use and purpose
- KU13.** different types of hydraulic mechanisms
- KU14.** principles of friction
- KU15.** steering mechanisms and correct way of steering on slopes
- KU16.** the relevance of greasing and oiling excavator components that require routine lubrication
- KU17.** instrument panel / cabin controls, their location and operation
- KU18.** controls, levers and switches in order to operate the excavator properly
- KU19.** excavator components, such as the engine, hydraulic pump, drive & swing motors, track chain, rollers, sprockets, boom, stick, bucket and other attachments, must be in good operating order
- KU20.** optimal engine oil pressure, radiator coolant temperature
- KU21.** visual checks to identify damage, defects, cracks or leaks beforehand

Generic Skills (GS)

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

- GS1.** record any deviations/ incidents as per prescribed norms
- GS2.** read and comprehend basic english to read manuals of operations
- GS3.** read instructions, guidelines/procedures/rules related to the worksite and equipment operations
- GS4.** give clear instructions to co-workers, subordinates and other personnel
- GS5.** when talking with your supervisor, utilize the right technical words
- GS6.** decide when to conduct maintenance checks
- GS7.** work with supervisors/ team mates to carry out work related tasks
- GS8.** plan work according to the required schedule and location



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- GS9.** plan for cleaning and lubricating the every day
- GS10.** deliver first-rate service to ensure client satisfaction
- GS11.** identify immediate or temporary solutions to resolve mechanical issues
- GS12.** judge when to seek assistance from supervisor
- GS13.** determine cause and effect relationships in his field of employment
- GS14.** examine, evaluate, and apply knowledge acquired from observation, experience, logic, or communication in order to act efficiently

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Pre Operation Checks</i>	10	60	-	-
PC1. abide with the supervisor's time limitations	1	1	-	-
PC2. check for cracks and wear in the turret and undercarriage	-	4	-	-
PC3. make sure that there is no abnormal wear or cracked teeth in the tracks & sprockets	-	3	-	-
PC4. check for dents and cracks on the welded areas of the boom and the stick	1	3	-	-
PC5. ensure that the oil levels in the engine, radiator coolant, final drive and hydraulic oil and top up, if necessary as per manufacturer's recommendations	-	4	-	-
PC6. check the fan belt tension	-	3	-	-
PC7. set the rear and side mirrors for correct viewing position	-	2	-	-
PC8. check for leaks in the hydraulic hoses and cylinders	1	3	-	-
PC9. carry out inspections to verify that the horn and work lights are in proper working order	1	2	-	-
PC10. check battery electrolyte level and terminal tightness	1	3	-	-
PC11. inspect the different controls, gauges, warning lights, and confirm that all safety and maintenance stickers are present	1	3	-	-
PC12. check and adjust the operator seat, seat belts and set them as per comfort level	1	2	-	-
PC13. check the circle turn gear and clean if required	-	3	-	-
PC14. ensure that the air filter dust bowls are clean, and that the gasket and inner filter are in good condition	-	4	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC15. check and ensure that all cabin controls including electronic display are functioning properly	-	4	-	-
PC16. drain the water and debris from the fuel tank	1	3	-	-
PC17. make sure that all the pins, bushings and pivot points are properly greased	-	4	-	-
PC18. maintain clean footplates and steps free of mud, dirt and oil	-	3	-	-
PC19. before operation, ensure that no one is beneath or on the machine	-	2	-	-
PC20. maintain a Inspection/maintenance logbook to record all activities performed before starting the excavator	1	2	-	-
PC21. report defects precisely to the supervisor if beyond scope of his role	1	2	-	-
NOS Total	10	60	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	IES/N0107
NOS Name	Carry out pre-operation checks on an excavator
Sector	Infrastructure Equipment
Sub-Sector	Equipment Operations
Occupation	Operator
NSQF Level	4
Credits	4
Version	3.0
Last Reviewed Date	NA
Next Review Date	17/11/2025
NSQF Clearance Date	17/11/2022

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IES/N0108: Operate an excavator

Description

This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that are required for operating an excavator.

Scope

The scope covers the following :

- Excavator operations, loading and Load dumping

Elements and Performance Criteria

Excavator operations

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

- PC1.** plan and arrange the work in accordance with the instructions
- PC2.** examine the jobsite for loose soil, concealed deep ditches, or marshy spots where the excavator might become trapped
- PC3.** using the ignition switch, start the engine
- PC4.** in cold season, use the priming pump and pre-heater to start the engine
- PC5.** identify and choose the proper attachment to be required for the task at hand on the job site
- PC6.** use the emergency stop button to disable all power to the excavator in case of a crisis, as per operator manual
- PC7.** report any issues/problems encountered while operating the excavator to the supervisor

Loading

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

- PC8.** assure that the excavator load and operating speed are within the manufacturer's specifications
- PC9.** keep a close eye out for workers and dangers such as trenches, potholes, and wires
- PC10.** make visual inspections on essential temperature and pressure gauges while they are in operation
- PC11.** abide with the supervisor's time limitations
- PC12.** make sure that no other operators travel on or near the excavator
- PC13.** ensure that walkway rules e.g. operating the excavator within the permissible/ allocated areas are followed
- PC14.** use the excavator's signaling equipment wisely, such as the turn signal, parking indication and air horn
- PC15.** before tipping over an edge, stay a safe distance from it and utilize an authorized stop block
- PC16.** maintain a safe distance from other plants and vehicles
- PC17.** judge the grade of the excavator travel limitation and operate accordingly

Load Dumping

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

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- PC18.** ensure that excavator is always parked on firm, level ground; with handbrake applied and drive and controls disengaged
- PC19.** operate the body hoist control handle to maneuver the hydraulic ram that tips the dump
- PC20.** release the load securely in the place and manner specified by the supervisor

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organization's breakdown and maintenance procedures and guidelines
- KU2.** the company's performance criteria and processes
- KU3.** reporting structure in the company
- KU4.** escalation matrix for reporting unresolved problems
- KU5.** schedule for resolving the complaint/problem
- KU6.** work goal and review mechanism with supervisor for obtaining/giving feedback on performance process
- KU7.** location of tools
- KU8.** contact person in case of queries on procedure or products
- KU9.** location and process for storage and disposal of waste material
- KU10.** safety policy of the company
- KU11.** various excavators and their uses and functions
- KU12.** proper use of different accessories such as excavation buckets, skeleton buckets, ditch cleaning buckets, tiltable ditch cleaning buckets, trapezoidal buckets, fast couplers, pin grabbers, and quick coupler hammers Contractor grapples, demolition and sorting grapples, orange peel grapples, and so on
- KU13.** differentiate between several attachment types
- KU14.** introduction to the engine and transmission, as well as their use and purpose
- KU15.** different types of hydraulic mechanisms
- KU16.** principles of friction
- KU17.** steering techniques and the proper technique to steer on a slope
- KU18.** the relevance of greasing and oiling excavator components that require routine lubrication
- KU19.** instrument panel / cabin controls, their location and operation
- KU20.** controls, levers and switches in order to operate the excavator properly
- KU21.** excavator components, such as the hoist, propel system, power train, hoist, boom & stick, and other attachments, must be in good operating order
- KU22.** optimal engine oil pressure, radiator coolant temperature
- KU23.** visual inspections are performed ahead of time to detect damage, flaws, cracks, or leaks
- KU24.** the risks of excavating in the vicinity of misfired shots
- KU25.** all safety signs and other emergency signals
- KU26.** correct maintenance procedures for excavator
- KU27.** the location and procedure of using the emergency stop button
- KU28.** response to emergencies e.g. correct way to use fire extinguisher

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Generic Skills (GS)

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

- GS1.** keep a record of any deviations or occurrences that do not conform to the specified standards
- GS2.** read and comprehend basic english to read manuals of operations
- GS3.** understand stakes and signs on the road and on the job site
- GS4.** read instructions, guidelines/procedures/rules related to the worksite and equipment operations
- GS5.** give clear instructions to co-workers, subordinates and other personnel
- GS6.** when talking with your supervisor, utilize the right technical words
- GS7.** examine the excavator for any damage or defective components and take appropriate measures
- GS8.** decide when to conduct suitable driving actions, such as forward, reverse, 'u' turn, and tight spot
- GS9.** work with supervisors/ team mates to carry out work related tasks
- GS10.** plan work according to the required schedule and location
- GS11.** deliver first-rate service to ensure client satisfaction
- GS12.** identify immediate or temporary solutions to resolve mechanical issues
- GS13.** judge when to seek assistance from supervisor
- GS14.** investigate possible methods to enhance operational efficiency
- GS15.** propose ways to avoid accidents/errors when running the equipment
- GS16.** examine, evaluate, and apply knowledge acquired from observation, experience, logic, or communication in order to act efficiently

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Excavator operations</i>	3	20	-	-
PC1. plan and arrange the work in accordance with the instructions	-	3	-	-
PC2. examine the jobsite for loose soil, concealed deep ditches, or marshy spots where the excavator might become trapped	-	3	-	-
PC3. using the ignition switch, start the engine	-	3	-	-
PC4. in cold season, use the priming pump and pre-heater to start the engine	1	3	-	-
PC5. identify and choose the proper attachment to be required for the task at hand on the job site	1	3	-	-
PC6. use the emergency stop button to disable all power to the excavator in case of a crisis, as per operator manual	-	3	-	-
PC7. report any issues/problems encountered while operating the excavator to the supervisor	1	2	-	-
<i>Loading</i>	2	26	-	-
PC8. assure that the excavator load and operating speed are within the manufacturer's specifications	-	3	-	-
PC9. keep a close eye out for workers and dangers such as trenches, potholes, and wires	-	3	-	-
PC10. make visual inspections on essential temperature and pressure gauges while they are in operation	-	2	-	-
PC11. abide with the supervisor's time limitations	-	3	-	-
PC12. make sure that no other operators travel on or near the excavator	1	2	-	-
PC13. ensure that walkway rules e.g. operating the excavator within the permissible/ allocated areas are followed	-	3	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. use the excavator's signaling equipment wisely, such as the turn signal, parking indication and air horn	-	3	-	-
PC15. before tipping over an edge, stay a safe distance from it and utilize an authorized stop block	-	3	-	-
PC16. maintain a safe distance from other plants and vehicles	1	2	-	-
PC17. judge the grade of the excavator travel limitation and operate accordingly	-	2	-	-
<i>Load Dumping</i>	1	8	-	-
PC18. ensure that excavator is always parked on firm, level ground; with handbrake applied and drive and controls disengaged	-	3	-	-
PC19. operate the body hoist control handle to maneuver the hydraulic ram that tips the dump	-	3	-	-
PC20. release the load securely in the place and manner specified by the supervisor	1	2	-	-
NOS Total	6	54	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	IES/N0108
NOS Name	Operate an excavator
Sector	Infrastructure Equipment
Sub-Sector	Equipment Operations
Occupation	Operator
NSQF Level	4
Credits	4
Version	3.0
Last Reviewed Date	NA
Next Review Date	17/11/2025
NSQC Clearance Date	17/11/2022

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IES/N0109: Perform routine maintenance and troubleshooting of an excavator

Description

This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that are required for performing routine maintenance and troubleshooting on the excavator.

Scope

The scope covers the following :

- Routine maintenance Basic diagnostics and troubleshooting
- Documentation and Reporting

Elements and Performance Criteria

Routine maintenance

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

- PC1.** monitoring machine working hours allows you to determine the best service plan
- PC2.** at regular intervals, clean the dust bowls of air filter
- PC3.** at regular intervals, clean the footplates, pedals, and stairs of mud, grime, ice, and snow
- PC4.** everyday drain the water and debris from the fuel tank
- PC5.** check and top up coolants, lubricants and all fluids everyday
- PC6.** grease all pins and bushings of pivot points everyday
- PC7.** check battery acid levels and terminal condition, and do minor adjustments as needed
- PC8.** if a fault is found that is outside the scope of his duty, notify the supervisor immediately

Basic diagnostics and troubleshooting

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

- PC9.** before performing any repair, be certain that the machine is on firm and level ground
- PC10.** timely completion of daily / weekly maintenance sheets as provided by the company
- PC11.** while doing maintenance, be sure that appropriate props/support devices are utilized and that the bucket is not lifted
- PC12.** make sure that no engine repair is conducted while the engine is running or remains hot
- PC13.** troubleshoot and analyze the problem
- PC14.** handle and dispose waste based on environmental guidelines at the work place
- PC15.** adhere to the reporting procedures established by the employer
- PC16.** complete all documents in accordance with the required standards in a timely way

Documentation and Reporting

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

- PC17.** report and escalate problems/ incidents as required in a timely manner

Knowledge and Understanding (KU)

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The individual on the job needs to know and understand:

- KU1.** the organization's breakdown and repair processes and guidelines
- KU2.** the company's performance criteria and processes
- KU3.** reporting structure in the company
- KU4.** escalation matrix for reporting unresolved problems
- KU5.** schedule for resolving the complaint/problem
- KU6.** work goal and review mechanism with supervisor for obtaining/giving feedback on performance process
- KU7.** location of special tools and their use
- KU8.** contact person in case of queries on procedure or products
- KU9.** location and process for storage and disposal of waste material
- KU10.** safety policy of the company

Generic Skills (GS)

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

- GS1.** keep a record of any deviations or occurrences that do not conform to the specified standards
- GS2.** read and comprehend basic english to read manuals of operations
- GS3.** read instructions, guidelines/procedures/rules related to the worksite and equipment operations
- GS4.** give clear instructions to co-workers, subordinates and other personnel
- GS5.** when talking with your supervisor, utilize the right technical words
- GS6.** decide when to conduct maintenance checks
- GS7.** evaluate the decision and conduct basic trouble shooting
- GS8.** work with supervisors/ team mates to carry out work related tasks
- GS9.** plan work according to the required schedule and location
- GS10.** plan for regular maintenance on a daily basis before machine operations
- GS11.** deliver first-rate service to ensure client satisfaction
- GS12.** identify immediate or temporary solutions to resolve mechanical issues
- GS13.** discover when to seek assistance from supervisor
- GS14.** investigate possible methods to enhance operational efficiency
- GS15.** check for damages and diagnose common problems in the excavator and take relevant action
- GS16.** examine, evaluate, and apply knowledge acquired from observation, experience, logic, or communication in order to act efficiently

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Routine maintenance</i>	3	21	-	-
PC1. monitoring machine working hours allows you to determine the best service plan	-	3	-	-
PC2. at regular intervals, clean the dust bowls of air filter	1	2	-	-
PC3. at regular intervals, clean the footplates, pedals, and stairs of mud, grime, ice, and snow	-	3	-	-
PC4. everyday drain the water and debris from the fuel tank	-	3	-	-
PC5. check and top up coolants, lubricants and all fluids everyday	-	3	-	-
PC6. grease all pins and bushings of pivot points everyday	-	3	-	-
PC7. check battery acid levels and terminal condition, and do minor adjustments as needed	1	3	-	-
PC8. if a fault is found that is outside the scope of his duty, notify the supervisor immediately	1	1	-	-
<i>Basic diagnostics and troubleshooting</i>	4	20	-	-
PC9. before performing any repair, be certain that the machine is on firm and level ground	-	3	-	-
PC10. timely completion of daily / weekly maintenance sheets as provided by the company	2	1	-	-
PC11. while doing maintenance, be sure that appropriate props/support devices are utilized and that the bucket is not lifted	-	3	-	-
PC12. make sure that no engine repair is conducted while the engine is running or remains hot	-	3	-	-
PC13. troubleshoot and analyze the problem	-	3	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. handle and dispose waste based on environmental guidelines at the work place	1	2	-	-
PC15. adhere to the reporting procedures established by the employer	-	3	-	-
PC16. complete all documents in accordance with the required standards in a timely way	1	2	-	-
<i>Documentation and Reporting</i>	-	2	-	-
PC17. report and escalate problems/ incidents as required in a timely manner	-	2	-	-
NOS Total	7	43	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	IES/N0109
NOS Name	Perform routine maintenance and troubleshooting of an excavator
Sector	Infrastructure Equipment
Sub-Sector	Equipment Operations
Occupation	Operator
NSQF Level	4
Credits	4
Version	3.0
Last Reviewed Date	NA
Next Review Date	17/11/2025
NSQF Clearance Date	17/11/2022

Qualification Pack

IES/N7601: Comply with worksite health and safety

Description

This unit is about adhering to health and safety requirements at the worksite during equipment operations.

Scope

The scope covers the following :

- Worksite health and safety

Elements and Performance Criteria

Worksite health and safety

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

- PC1.** Comply with safety, health, security and environment related regulations/guidelines at the work site
- PC2.** use personal protective equipment (ppe) and other safety gear as applicable to the equipment and the worksite
- PC3.** Follow safety measures during operations to ensure that the health and safety of self or others (including members of the public) is not at risk
- PC4.** Carry out operations as per the manufacturer's and worksite related health and safety guidelines
- PC5.** Handle the transport, storage and disposal of hazardous materials and waste in compliance with worksite health, safety and environmental guidelines
- PC6.** operate various grades of fire extinguishers, as applicable
- PC7.** support in administering basic first aid and report to concerned team members, as required, in case of an accident
- PC8.** respond promptly and appropriately to an accident/ incident or emergency, within limits of your role and responsibility
- PC9.** record and report details related to operations, incidents or accidents, as applicable

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** health, safety, environmental (HSE) and security related policies/guidelines of the organization and the worksite and its importance
- KU2.** personnel responsible for health, safety and environment (HSE) related matters and their contact details
- KU3.** location of worksite storage, she team and safe assembly points
- KU4.** reporting and documentation procedures for HSE and security matters
- KU5.** manufacturers guidelines related to health and safety requirements

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- KU6.** common types of health, safety, environment and security risks related to the worksite and operations
- KU7.** types, use and importance of personal protective equipment (PPE) and other safety gear
- KU8.** safe working practices to avoid common hazards and risks
- KU9.** guidelines for transport, storage and disposal of hazardous materials and waste
- KU10.** types of common hazards and risks at the worksite including fire, electrical, gas emergencies, accidents, incidents, structure collapse, machine breakdown
- KU11.** knowledge of safe lockdown/stop of machinery use in case of emergencies and incidents/accidents
- KU12.** types of fire extinguishers and their use
- KU13.** common injuries and appropriate basic first aid treatment e.g. electrical shock, bleeding, wounds, fractures, minor burns, eye injuries

Generic Skills (GS)

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

- GS1.** document and report any health and safety related incidents/accidents
- GS2.** read and comprehend basic English to read manuals of operations
- GS3.** read all organizational and equipment related health and safety manuals and documents
- GS4.** read instructions, guidelines / procedures /rules related to the worksite and equipment operations
- GS5.** Give clear instructions to co-workers, subordinates and other personnel
- GS6.** Use correct technical terms while interacting with supervisor
- GS7.** Make an appropriate timely decision in responding to emergencies/accidents in line with organizational/worksite guidelines
- GS8.** Use correct PPE and other safety gear while at the worksite
- GS9.** Work with supervisors/ team mates to carry out work related tasks
- GS10.** Plan work according to the required schedule and location
- GS11.** Build and maintain positive and effective relationships with colleagues and customers
- GS12.** Seek appropriate assistance from other sources to resolve problems
- GS13.** Assess the intensity of the fire accident and operate fire extinguishers
- GS14.** Analyse, evaluate and apply the information gathered from observation, experience, reasoning, or communication to act efficiently

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Worksite health and safety</i>	5	10	-	-
PC1. Comply with safety, health, security and environment related regulations/guidelines at the work site	0.5	1	-	-
PC2. use personal protective equipment (ppe) and other safety gear as applicable to the equipment and the worksite	0.5	1	-	-
PC3. Follow safety measures during operations to ensure that the health and safety of self or others (including members of the public) is not at risk	0.5	1	-	-
PC4. Carry out operations as per the manufacturer's and worksite related health and safety guidelines	0.5	1	-	-
PC5. Handle the transport, storage and disposal of hazardous materials and waste in compliance with worksite health, safety and environmental guidelines	1	1	-	-
PC6. operate various grades of fire extinguishers, as applicable	0.5	2	-	-
PC7. support in administering basic first aid and report to concerned team members, as required, in case of an accident	0.5	1	-	-
PC8. respond promptly and appropriately to an accident/ incident or emergency, within limits of your role and responsibility	0.5	1	-	-
PC9. record and report details related to operations, incidents or accidents, as applicable	0.5	1	-	-
NOS Total	5	10	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	IES/N7601
NOS Name	Comply with worksite health and safety
Sector	Infrastructure Equipment
Sub-Sector	Equipment Operations
Occupation	Operator
NSQF Level	4
Credits	1
Version	3.0
Last Reviewed Date	NA
Next Review Date	17/11/2025
NSQF Clearance Date	17/11/2022

Qualification Pack

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

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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

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- 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

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	1	1	-	-
PC1. understand the significance of employability skills in meeting the job requirements	-	-	-	-
<i>Constitutional values - Citizenship</i>	1	1	-	-
PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	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.	-	-	-	-
<i>Basic English Skills</i>	2	3	-	-
PC4. speak with others using some basic English phrases or sentences	-	-	-	-
<i>Communication Skills</i>	1	1	-	-
PC5. follow good manners while communicating with others	-	-	-	-
PC6. work with others in a team	-	-	-	-
<i>Diversity & Inclusion</i>	1	1	-	-
PC7. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC8. report any issues related to sexual harassment	-	-	-	-
<i>Financial and Legal Literacy</i>	3	4	-	-
PC9. use various financial products and services safely and securely	-	-	-	-

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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	-	-	-	-
<i>Essential Digital Skills</i>	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	-	-	-	-
<i>Entrepreneurship</i>	3	5	-	-
PC14. identify and assess opportunities for potential business	-	-	-	-
PC15. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
<i>Customer Service</i>	2	2	-	-
PC16. identify different types of customers	-	-	-	-
PC17. identify customer needs and address them appropriately	-	-	-	-
PC18. follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	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	-	-

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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	NA
Next Review Date	27/05/2024
NSQC Clearance Date	27/05/2021

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

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

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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
IES/N0107.Carry out pre-operation checks on an excavator	10	60	-	-	70	20
IES/N0108.Operate an excavator	6	54	-	-	60	30
IES/N0109.Perform routine maintenance and troubleshooting of an excavator	7	43	-	-	50	20
IES/N7601.Comply with worksite health and safety	5	10	-	-	15	15
DGT/VSQ/N0101.Employability Skills (30 Hours)	20	30	-	-	50	15
Total	48	197	-	-	245	100

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Acronyms

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

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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.

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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.