

Qualification Pack



Tower Crane Operator

QP Code: IES/Q0122

Version: 3.0

NSQF Level: 4

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



Qualification Pack

Contents

IES/Q0122: Tower Crane Operator	3
<i>Brief Job Description</i>	3
Applicable National Occupational Standards (NOS)	3
<i>Compulsory NOS</i>	3
<i>Qualification Pack (QP) Parameters</i>	3
IES/N0164: Carry out pre-operation checks on a tower crane	5
IES/N0165: Carry out tower crane operations	11
IES/N0166: Carry out maintenance and troubleshooting of the tower crane	17
IES/N7601: Comply with worksite health and safety	23
DGT/VSQ/N0101: Employability Skills (30 Hours)	27
Assessment Guidelines and Weightage	32
<i>Assessment Guidelines</i>	32
<i>Assessment Weightage</i>	33
Acronyms	34
Glossary	35

Qualification Pack

IES/Q0122: Tower Crane Operator

Brief Job Description

A tower crane operator controls crane movements for loading and unloading of materials, equipment, machines, etc. at different heights on the worksite. They control the crane by responding to hand or radio signals by a supervisor or signaller.

Personal Attributes

The job requires an operator to be physically agile, strong and should have good eye sight and not be color blind, fit to work at heights. He should constantly be alert to the signals from the signaller and multiple concurrent activities during the operations

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [IES/N0164: Carry out pre-operation checks on a tower crane](#)
2. [IES/N0165: Carry out tower crane operations](#)
3. [IES/N0166: Carry out maintenance and troubleshooting of the tower crane](#)
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-2015/8343.0700 Tower crane Operator

Qualification Pack

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 Relevant OR 10th grade pass and pursuing continuous schooling OR 11th grade pass
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NIL
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/06799
NQR Version	3.0

Qualification Pack

IES/N0164: Carry out pre-operation checks on a tower crane

Description

This Unit provides insight into activities that are required for conducting prechecks on the tower crane before starting the operations

Scope

The scope covers the following :

- Pre-operation checks
- Reporting and documentation

Elements and Performance Criteria

Pre- operation checks

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

- PC1.** check that the base on which the tower crane is mounted is clear of cracks
- PC2.** check the tightness of the bolts and nuts
- PC3.** visually examine all mast parts for defects and rust
- PC4.** examine the components of the operator station, such as the seat, instrument panel, crane load chart and communication equipment
- PC5.** check the panel board system for adequate power supply and switch functionality
- PC6.** check the levels of grease in components such as pulley, rope, trolley and swing gear parts
- PC7.** inspect load bearing structure components such as boom pins, pendant lines, boom hoist reeve or bridle, mast, base and under carriage for any wear and tear
- PC8.** examine the hoisting system for smooth movement of components such as wire rope, fittings, drums, hooks, sheaves and winch mounts
- PC9.** check for stabilizing system components for levels of counter & ballasted weights
- PC10.** inspect hydraulic system components like hydraulic fluid, filters, lines, pumps and fittings
- PC11.** check the engine oil levels and radiator coolant temperature indicators
- PC12.** ensure that the work site is clear from all personnel and other equipment before starting

Reporting and documentation

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

- PC13.** keep a pre-operational check logbook to document all actions before operating the tower crane
- PC14.** if a fault is found that goes outside the scope of the role, notify the supervisor immediately

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organization's operational, maintenance and safety policies

Qualification Pack

- KU2.** the operational standards & procedures followed in the company
- KU3.** reporting structure of the company
- KU4.** location of specialized tools and the equipment
- KU5.** location and procedure for trash storage and disposal
- KU6.** contact person/area in case of emergency
- KU7.** crane technical specifications, features and performance
- KU8.** identification of components of a tower crane and its functioning - Operators Cabin - Boom/Jib - Mast - Trolley - Hoist - Levers/ Joystick - Counterweight - Communication Devices
- KU9.** types of motor and its uses
- KU10.** basic physics principles and its applications
- KU11.** basic of weight balancing
- KU12.** the fundamentals of electrical systems, including the control panel
- KU13.** common defects and general causes of breakdown
- KU14.** different methods of climbing and lowering tower cranes
- KU15.** procedure of topping up fuel, lube oil and coolant in the machine
- KU16.** optimal working parameters- engine oil pressure, hydraulic oil pressure and temperatures
- KU17.** different methods of climbing and lowering tower cranes
- KU18.** manufacturer's specifications for tools and supplies

Generic Skills (GS)

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

- GS1.** record information/observations on activities/incidents in accordance with the established standards
- GS2.** read and understand basic signs, symbols, graphs, charts and decals on equipment and at the job site
- GS3.** read and comprehend the essential elements of the equipment operation and maintenance manuals
- GS4.** in interacting with coworkers and supervisor, utilize suitable technical terms/phrases
- GS5.** efficiently explain/instruct other team members in a clear and concise way
- GS6.** pay close attention to and comprehend the questions/comments offered by other team members
- GS7.** determine when to escalate the problem and seek assistance if it is out of scope
- GS8.** prioritize and plan equipment repair to suit operating demands
- .
- GS9.** plan and organize the work schedule in collaboration with the rest of the team and the supervisor
- GS10.** execute the duties efficiently within the time limit given and within the quality standards set; with minimum supervision
- GS11.** ensure quality service is delivered as committed to achieve high levels of customer satisfaction



Qualification Pack

- GS12.** analyze potential solutions and take necessary corrective steps and activities
- GS13.** utilize common sense and reasoning abilities to determine the source of delays and execution issues
- GS14.** apply knowledge and judgement gained via experience and awareness to efficiently carry out activities

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Pre- operation checks</i>	8	18	-	-
PC1. check that the base on which the tower crane is mounted is clear of cracks	0.5	1	-	-
PC2. check the tightness of the bolts and nuts	0.5	1	-	-
PC3. visually examine all mast parts for defects and rust	-	1	-	-
PC4. examine the components of the operator station, such as the seat, instrument panel, crane load chart and communication equipment	1	1	-	-
PC5. check the panel board system for adequate power supply and switch functionality	1	2	-	-
PC6. check the levels of grease in components such as pulley, rope, trolley and swing gear parts	0.5	1	-	-
PC7. inspect load bearing structure components such as boom pins, pendant lines, boom hoist reeve or bridle, mast, base and under carriage for any wear and tear	1	2	-	-
PC8. examine the hoisting system for smooth movement of components such as wire rope, fittings, drums, hooks, sheaves and winch mounts	1	2	-	-
PC9. check for stabilizing system components for levels of counter & ballasted weights	1	2	-	-
PC10. inspect hydraulic system components like hydraulic fluid, filters, lines, pumps and fittings	0.5	2	-	-
PC11. check the engine oil levels and radiator coolant temperature indicators	0.5	2	-	-
PC12. ensure that the work site is clear from all personnel and other equipment before starting	0.5	1	-	-
<i>Reporting and documentation</i>	2	2	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. keep a pre-operational check logbook to document all actions before operating the tower crane	1	1	-	-
PC14. if a fault is found that goes outside the scope of the role, notify the supervisor immediately	1	1	-	-
NOS Total	10	20	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	IES/N0164
NOS Name	Carry out pre-operation checks on a tower crane
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/N0165: Carry out tower crane operations

Description

This unit provides insight into activities that are required for performing the loading, unloading of materials using tower crane

Scope

The scope covers the following :

- Starting the tower crane
- Tower crane operations
- Shut down procedures
- Reporting and documentation

Elements and Performance Criteria

Starting the tower crane

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

- PC1.** visually scan the place for any sources of blockage or persons inside the circumference/check for nearby high-rise natural or man-made structures/high voltage lines/wind pattern
- PC2.** test the working condition of the communication device along with the signalman
- PC3.** start the engine and examine the controls on the operational panel for proper operation
- PC4.** before raising the weight, ensure that the levers, hoist and trolley gears are in good working order

Tower crane operations

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

- PC5.** direct the trolley to position itself over the cargo in accordance with the signalman's instructions
- PC6.** control the boom's direction by moving the levers in accordance with the signalman's instructions
- PC7.** lower the rope with sufficient speed towards the weight in accordance with the signalman's instructions
- PC8.** conduct hoisting activities such as lifting and lowering the boom with the cargo from low to high altitudes
- PC9.** while raising and slewing the load, keep an eye on the load movement indications and anti-collision sensors
- PC10.** control the speed of the boom while moving left or right side with using lever/joystick
- PC11.** dump the material at the specified location in accordance with the signalman's instructions

Shut down procedures

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

- PC12.** return the trolley to its home location
- PC13.** before shutting down the operation, set the weather vane in the desired position

Qualification Pack

- PC14.** switch off the power supply in accordance with the operating instructions
- PC15.** climb down the tower crane while wearing safety equipment and following the proper procedures
- PC16.** do a walk-around visual examination to assess the overall condition of the equipment

Reporting and documentation

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

- PC17.** keep a logbook to keep track of all actions
- PC18.** if a fault is found that is outside the scope of his duty, notify the supervisor immediately

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organization's operational, maintenance and safety policies
- KU2.** the operational standards & procedures followed in the company
- KU3.** reporting structure of the company
- KU4.** location of specialized tools and the equipment
- KU5.** location and procedure for trash storage and disposal
- KU6.** contact person/area in case of emergency
- KU7.** crane technical specifications, features and performance
- KU8.** load Chart reading and balancing of weight
- KU9.** set-up requirements and radius requirements
- KU10.** ground and supporting conditions are elements that influence equipment stability
- KU11.** motion, balance and stability concepts such as fulcrum points, leverage, centre of gravity, horizontal and vertical stability, speed, centrifugal force and acceleration
- KU12.** in order to operate the tower crane, controllers, levers and switches must be used
- KU13.** on-equipment operator assistance devices, such as load movement indications and anti-collision sensors
- KU14.** overhead utilities and guide wires, other equipment, workers and automobile traffic are examples of real and prospective risks
- KU15.** impact of wind speed, storms and other weather conditions on equipment
- KU16.** safety controls and equipment such as automatic limit switches, overload limit devices and fire extinguishers
- KU17.** to avoid damage, safety precautions must be taken during an emergency
- KU18.** staff positions on-site, such as supervisor, signaller and others

Generic Skills (GS)

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

- GS1.** record information/observations on activities/incidents in accordance with the established standards

Qualification Pack

- GS2.** read and understand basic signs, symbols, graphs, charts and decals on equipment and at the job site
- GS3.** read and comprehend the essential elements of the equipment operation and maintenance manuals
- GS4.** in interacting with coworkers and supervisor, utilize suitable technical terms/phrases
- GS5.** efficiently explain/instruct other team members in a clear and concise way
- GS6.** pay close attention to and comprehend the questions/comments offered by other team members
- GS7.** determine when to escalate the problem and seek assistance if it is out of scope
- GS8.** prioritize and plan equipment repair to suit operating demands
- GS9.** plan and organize the work schedule in collaboration with the rest of the team and the supervisor
- GS10.** execute the duties efficiently within the time limit given and within the quality standards set; with minimum supervision
- GS11.** ensure quality service is delivered as committed to achieve high levels of customer satisfaction
- GS12.** analyze potential solutions and take necessary corrective steps and activities
- GS13.** utilize common sense and reasoning abilities to determine the source of delays and execution issues
- GS14.** apply knowledge and judgement gained via experience and awareness to efficiently carry out activities

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Starting the tower crane</i>	2	7	-	-
PC1. visually scan the place for any sources of blockage or persons inside the circumference/check for nearby high-rise natural or man-made structures/high voltage lines/wind pattern	1	2	-	-
PC2. test the working condition of the communication device along with the signalman	1	1	-	-
PC3. start the engine and examine the controls on the operational panel for proper operation	-	2	-	-
PC4. before raising the weight, ensure that the levers, hoist and trolley gears are in good working order	-	2	-	-
<i>Tower crane operations</i>	5	11	-	-
PC5. direct the trolley to position itself over the cargo in accordance with the signalman's instructions	1	2	-	-
PC6. control the boom's direction by moving the levers in accordance with the signalman's instructions	1	2	-	-
PC7. lower the rope with sufficient speed towards the weight in accordance with the signalman's instructions	1	1	-	-
PC8. conduct hoisting activities such as lifting and lowering the boom with the cargo from low to high altitudes	-	1	-	-
PC9. while raising and slewing the load, keep an eye on the load movement indications and anti-collision sensors	1	2	-	-
PC10. control the speed of the boom while moving left or right side with using lever/joystick	1	2	-	-
PC11. dump the material at the specified location in accordance with the signalman's instructions	-	1	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Shut down procedures</i>	3	4	-	-
PC12. return the trolley to its home location	-	0.5	-	-
PC13. before shutting down the operation, set the weather vane in the desired position	1	1	-	-
PC14. switch off the power supply in accordance with the operating instructions	-	1	-	-
PC15. climb down the tower crane while wearing safety equipment and following the proper procedures	1	1	-	-
PC16. do a walk-around visual examination to assess the overall condition of the equipment	1	0.5	-	-
<i>Reporting and documentation</i>	2	1	-	-
PC17. keep a logbook to keep track of all actions	1	0.5	-	-
PC18. if a fault is found that is outside the scope of his duty, notify the supervisor immediately	1	0.5	-	-
NOS Total	12	23	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	IES/N0165
NOS Name	Carry out tower crane operations
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/N0166: Carry out maintenance and troubleshooting of the tower crane

Description

This unit provides insight into activities that are required for performing routine maintenance and troubleshooting of a tower crane

Scope

The scope covers the following :

- Preventive maintenance
- Repair and troubleshooting
- Reporting and documentation

Elements and Performance Criteria

Preventive maintenance

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

- PC1.** determine the service requirement for the equipment as per the scheduled maintenance
- PC2.** replenish coolants, lubricants and fluids as per the running of the machine or as per the operational manual
- PC3.** grease all greasing pins, trolley pins, hoist and rope and slewing bolts regularly as per the usage of the machine
- PC4.** the tower crane's service lubricating system, electrical service system, hoisting system and stabilizing system
- PC5.** service jib/boom and mast based on equipment use
- PC6.** check battery acid levels and terminal condition and make small adjustments as needed
- PC7.** as per the organizational requirements, ensure that all tools are returned to their proper location after use

Repair and troubleshooting

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

- PC8.** ensure the main power is turned off from panel completely before carrying out maintenance work
- PC9.** while troubleshooting, be certain that the proper tools are utilized
- PC10.** identify the issue and relevant repair techniques
- PC11.** if a fault is found that is outside the scope of his duty, notify the supervisor immediately
- PC12.** dispose waste as per the guidelines of the site/ organization

Reporting and documentation

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

- PC13.** adhere to the reporting procedures established by the employer
- PC14.** complete all documents in accordance with the prescribed standards on time

Qualification Pack

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organization's operational, maintenance and safety policies
- KU2.** the operational standards & procedures followed in the company and schedule for resolving the complaint/problem if any
- KU3.** reporting structure of the company
- KU4.** location of specialized tools and the equipment
- KU5.** location and procedure for trash storage and disposal
- KU6.** maintenance schedule of the equipment
- KU7.** types of motor and its uses
- KU8.** basic physics principles and its applications
- KU9.** basic of weight balancing
- KU10.** the fundamentals of electrical systems, including the control panel
- KU11.** common defects and general causes of breakdown
- KU12.** spill kit procedures

Generic Skills (GS)

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

- GS1.** record information/observations on activities/incidents in accordance with the established standards
- GS2.** read and understand basic signs, symbols, graphs, charts and decals on equipment and at the job site
- GS3.** read and comprehend the essential elements of the equipment operation and maintenance manuals
- GS4.** in interacting with coworkers and supervisor, utilise suitable technical terms/phrases
- GS5.** efficiently explain/instruct other team members in a clear and concise way
- GS6.** pay close attention to and comprehend the questions/comments offered by other team members
- GS7.** determine when to escalate the problem and seek assistance if it is out of scope
- GS8.** prioritize and plan equipment repair to suit operating demands
- GS9.** plan and organise the work schedule in coordination with other team members & supervisor
- GS10.** execute the tasks efficiently within the time frame allotted and prescribed quality norms; with minimal supervision
- GS11.** ensure quality service is delivered as committed to achieve high levels of customer satisfaction
- GS12.** analyze potential solutions and take necessary corrective steps and activities
- GS13.** utilize common sense and reasoning abilities to determine the source of delays and execution issues



Qualification Pack

GS14. apply knowledge and judgement gained via experience and awareness to efficiently carry out activities

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Preventive maintenance</i>	3.5	7	-	-
PC1. determine the service requirement for the equipment as per the scheduled maintenance	0.5	1	-	-
PC2. replenish coolants, lubricants and fluids as per the running of the machine or as per the operational manual	0.5	1	-	-
PC3. grease all greasing pins, trolley pins, hoist and rope and slewing bolts regularly as per the usage of the machine	0.5	1	-	-
PC4. the tower crane's service lubricating system, electrical service system, hoisting system and stabilizing system	0.5	1	-	-
PC5. service Jib/boom and mast based on equipment use	0.5	1	-	-
PC6. check battery acid levels and terminal condition and make small adjustments as needed	0.5	1	-	-
PC7. as per the organizational requirements, ensure that all tools are returned to their proper location after use	0.5	1	-	-
<i>Repair and troubleshooting</i>	2.5	5	-	-
PC8. ensure the main power is turned off from panel completely before carrying out maintenance work	0.5	1	-	-
PC9. while troubleshooting, be certain that the proper tools are utilized	0.5	1	-	-
PC10. identify the issue and relevant repair techniques	0.5	1	-	-
PC11. if a fault is found that is outside the scope of his duty, notify the supervisor immediately	0.5	1	-	-
PC12. dispose waste as per the guidelines of the site/ organization	0.5	1	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Reporting and documentation</i>	1	1	-	-
PC13. adhere to the reporting procedures established by the employer	0.5	0.5	-	-
PC14. complete all documents in accordance with the prescribed standards on time	0.5	0.5	-	-
NOS Total	7	13	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	IES/N0166
NOS Name	Carry out maintenance and troubleshooting of the tower crane
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

Qualification Pack

- 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

Qualification Pack

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	-	-

Qualification Pack

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

Qualification Pack

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

Qualification Pack

- 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

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	1	1	-	-
PC1. 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	-	-	-	-

Qualification Pack

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	-	-

Qualification Pack

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 Performance Criteria (PC) (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).

Qualification Pack

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
IES/N0164.Carry out pre-operation checks on a tower crane	10	20	-	-	30	20
IES/N0165.Carry out tower crane operations	12	23	-	-	35	30
IES/N0166.Carry out maintenance and troubleshooting of the tower crane	7	13	-	-	20	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	54	96	-	-	150	100



Qualification Pack

Acronyms

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

Qualification Pack

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.

Qualification Pack

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