

(NSQ)

**FOR** 

# **CONSTRUCTION EQUIPMENT OPERATION**

**LEVEL ONE (1)** 

OCTOBER, 2022

#### **OVERVIEW**

This qualification is for those interested in developing a career in construction industry for the award of National Skills Qualifications (NSQ). It is aimed at producing Operator Helper for Construction Equipment at NSQ Level 1 with the competencies to perform daily routine checks and support the operator to drive, control, operate, and park construction equipment while complying with relevant regulatory, health and safety requirements.

This qualification is subject to review after five (5) years.

#### **QUALIFICATION PURPOSE**

This qualification is designed for individuals who are interested in developing a career in Construction Equipment Operations in the construction industry.

#### **QUALIFICATION REQUIREMENTS**

Candidates must:

- a. Be at least 18 years of age
- b. Be medically fit
- c. Be physically fit
- d. Be mentally fit
- e. Have achieved all the mandatory units in the qualification

#### Note:

This is a 19-credit unit qualification. To achieve this qualification; learners are required to achieve all credits units. Each Credit is equivalent to 10 Guided Learning Hours (GLH).

There are no optional units.

#### **QUALIFICATION OBJECTIVE**

At the end of the qualification, the Operator Helper should be able to:

- a. Communicate effectively in workplace
- b. Relate effectively in work environment
- c. Observe health and safety protocols
- d. Know Basic Construction Equipment
- e. Carryout Daily Routine check on Construction Equipment
- f. Carry out housekeeping at the workplace.
- g. Support the operator in the use of Construction Equipment before, during and after operations.

# Unit assessment requirements/evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is allowed in this unit and level.

- 1. Direct Observation (DO)
- 2. Question and Answer (QA)
- 3. Witness Testimony (WT)
- 4. Personal statement (PS) or Reflective Practice (RP)
- 5. Assignment (ASS)

# **GENERAL GUIDE**

Unit Title	Provides a clear explanation of the content of the
	unit.
Unit Number	The unique number assigned to the unit
Unit Reference	The unique reference number given to each unit at
	qualification approval by NBTE
Unit Level	Denotes the level of the unit within the National
	Skills Qualifications Framework NSQF.
Unit Credit Value	The value that has been given to the unit based on
	the expected learning time for an average learner.
	1 credit = 10 learning hours
Unit Purpose	Provides a brief outline of the unit content.
Learning Outcome	A statement of what a learner will know, understand
	or be able to do, as a result of learning process.
Assessment Criteria	A description of the requirements a learner must
	achieve to demonstrate that a learning outcome has
	been met.
Unit Assessment Guidance	Any additional guidance provided to support the
	assessment of the unit.
Unit Guided Learning Hours	The average number of hours of supervised or
	directed study time or assessment required to
	achieve a qualification or unit of a qualification.

# Level 1 — Operator Helper

# **MANDATORY UNITS**

Unit	Unit Reference	Unit Title	Credit Value	Guided
	Number			<b>Learning Hour</b>
1	CONST/CEO/OO1/L1	Occupational Health and Safety	2	20
		for Operator Helper		
2	CONST/CEO/OO2/L1	Communication Skills for	2	20
		Operator Helper		
3	CONST/CEO/OO3/L1	Team Work for Operator Helper	2	20
4	CONST/CEO/OO4/L1	Basic Construction Equipment	4	40
5	CONST/CEO/OO5/L1	Daily Routine Checks	5	50
6	CONST/CEO/OO6/L1	Support Service (Duties of	6	60
		Operator Helper)		
	Total		21	210

CONST = Construction Sector

CEO = Construction Equipment Operator

UNIT 001: Occupational Health and Safety for Operator Helper

Unit reference number: CONST/CEO/OO1/L1

NSQ level: 1

Credit value: 2

**Guided learning hours: 20** 

**Unit Purpose:** This unit is designed to provide the Operator Helper with the basic knowledge and skills required for health and safety in Construction Equipment Operation.

### **Unit Assessment Requirements/Evidence Requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is allowed in this unit and level.

- 1. Direct Observation (DO)
- 2. Question and Answer (QA)
- 3. Witness Testimony (WT)
- 4. Personal statement (PS) or Reflective Practice (RP)
- 5. Assignment (ASS)

UNIT 001: Occupational Health and Safety for Operator Helper

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA The learner can:	Evidence Type	Evidence Ref. Page No.				
LO 1: Safety Precaution in Workplace	1.1	List Personal Protective Equipment and wears  Nose mask Ear muff Overall Hand-gloves Safety boot Eye goggles Reflective jackets Helmet						
	1.2	Explain relevant safety precautions at:						
	1.4	Identify safety signs and symbols.						
LO 2: Occupational Hazards in workplace	2.1	Explain potential hazards at:  • Site • workplace						
Workplace	2.2	State causes of hazards in construction site  Explain how to report						
	2.4	hazards to the site supervisor  Explain how to prevent						
LO 3: Accident in workplace	3.1	hazards in a workplace Explain common types of accident in workplace						
Workplace	3.2	List causes of accident in the workplace						

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA The learner can:	Evidence Type	Evidence Ref. Page No.
	3.3	List basic items in the First Aid Box:		
	3.4	Explain basic First Aid procedures in the event of an accident  Describe how to administer First Aid		
LO 4 Demonstrate	4.1	Wear PPE as per organizational procedures.		
Safe work practices	4.2	Carry out Operator Helper /banksman's role in line with safe work practices.		
	4.3	Comply with safety procedures when assisting operator.		

Learners Signature:	Date
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

**UNIT 002:** Communication Skills for Operator Helper

Unit Reference Number: CONST/CEO/OO2/LI

NSQ level: 1

Credit value: 2

**Guided learning hours: 20** 

**Unit Purpose:** This unit is designed to provide the Operator Helper with the basic knowledge and skills needed to communicate effectively in the workplace.

# **Unit Assessment Requirements/Evidence Requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

- 1. Direct Observation (DO)
- 2. Question and Answer (QA)
- 3. Witness Testimony (WT)
- 4. Personal statement (PS) or Reflective Practice (RP)
- 5. Assignment (ASS)

UNIT 002: Communication Skills for Operator Helper

LEARNING OBJECTIVE (LO)						Evidence Type				enc No	
LO 1: Understand Communication in workplace	1.1	<ul> <li>Explain communication in workplace:</li> <li>peer to peer</li> <li>Operator to Operator Helper</li> <li>Operator Helper to operator</li> <li>Operator Helper to other team members</li> </ul>									
	1.2	State the importance of communication in a work environment.									
	1.3	Identify sources of information in workplace									
LO 2: Understand methods of Communication in workplace	2.1	Explain the forms of communication									
	2.2	Explain channels of communication in Workplace									
	2.3	State the means of communication  • Phone  • Radio  • Alarm, etc.									

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA The learner can:	vid /pe	се	Re	ence e No.		
LO 3: Understand elements of	3.1	Explain how to receive written information						
Communication in workplace	3.2	Explain how to follow verbal information						
	3.3	Describe how to use communication device to pass information						
LO 4: Communicate to Operator	4.1	Use basic signs to communicate with operator.						
to operator	4.2	Use Radio to communicate with operator.						
	4.3	Use phone to communicate with operator						
	4.4	Pass information to operator.						

Learners Signature:	Date
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

**UNIT 003:** Team Work for Operator Helper

Unit Reference Number: CONST/CEO/OO3/L1

NSQ level: 1

Credit value: 2

Guided learning hours: 20

**Unit Purpose:** This unit is designed to provide the trainee with the knowledge *and skills required to develop team spirit and positive relationship* in the workplace.

#### **Unit Assessment Requirements/Evidence Requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is allowed in this unit and level.

- 1. Direct Observation (DO)
- 2. Question and Answer (QA)
- 3. Witness Testimony (WT)
- 4. Personal statement (PS) or Reflective Practice (RP)
- 5. Assignment (ASS)

**UNIT 003:** Team Work for Operator Helper

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA The learner can:	vid /pe	ene	се	Re	enc No		
LO 1. Know	1 1		Ι	l	l		Ī		
LO 1: Know	1.1	State the importance of							
Team Work in		team work in workplace.							
Workplace	1.2	Explain relationship in							
		workplace:							
		<ul> <li>Peer to peer</li> </ul>							
		Subordinate to							
	4.0	superior							
	1.3	Identify inter-relationships							
		between sections/units in							
		workplace							
		<ul><li>Surveyors</li></ul>							
		<ul> <li>Operators</li> </ul>							
		<ul> <li>Safety Officers, etc.</li> </ul>							
LO 2:	2.1	Explain the need for good							
Understand		working relationship with							
how to relate		superior							
with Superior	2.2	list the qualities that							
		promote good working							
		relationship:							
		<ul> <li>Punctuality</li> </ul>							
		Regularity							
		Honesty							
		Diligence							
		Loyalty							
		Respect							
		•							
		Effective							
	2.2	communication, etc.							
	2.3	State the qualities of a good							
		Operator Helper:							
		Good attitude							
		Good observer							
		<ul> <li>Safety conscious, etc.</li> </ul>							

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA The learner can:	vidence /pe				enc No		
LO 3:	3.1	State the importance of							
Understand		good relationship with your							
how to relate		peers							
with peers	3.2	Explain the need for mutual respect							
	3.3	List factors that can affect relationship with peers:							
		<ul> <li>Impatience</li> <li>Dishonesty</li> <li>Disrespect</li> <li>Lack of respect for diversity, etc.</li> </ul>							
	3.4	State ways to enhance good peer relationship:  • Respect privacy • Be reliable and honest • Collaborate with one another • Avoid gossip, etc.							
LO 4:	4.1	Relate with team members.							
Positive work relationship	4.2	Assist Operator and team members.							
with team members	4.3	Communicate information that may affect other							
		workers on the site.							

Learners Signature:	Date
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

**UNIT 004:** Basic Construction Equipment

Unit reference number: CONST/CEO/OO4/L1

NSQ level: 1

Credit value: 4

Guided learning hours: 40

**Unit Purpose:** This unit is designed to provide the Operator Helper with the basic knowledge and skills in recognizing construction equipment.

## **Unit Assessment Requirements/Evidence Requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is allowed in this unit and level.

- 1. Direct Observation (DO)
- 2. Question and Answer (QA)
- 3. Witness Testimony (WT)
- 4. Personal statement (PS) or Reflective Practice (RP)
- 5. Assignment (ASS)

**UNIT 004:** Basic Construction Equipment

LEARNING OBJECTIVE		PERFORMANCE CRITERIA		/id /pe		се	Evi Re	enc	e;e
(LO)			• ,	γpc	•		_	No	<b>)</b> .
		The learner can:		ı					
LO 1: Earthmoving	1.1	Explain Earthmoving operation in construction.							
equipment in construction.	1.3	List equipment used for Earthmoving operation:							
	1.4	State the safety precautions required for the use of earth moving equipment.							
	1.5	Recognize any three of the following earthmoving equipment:							
LO 2: Equipment	2.1	Explain hoisting operation in construction							
used for	2.2	List types of equipment used for hoisting operation:  • Movable Pulley							

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA The learner can:	Evidence Type	Re	ef.	ence No.	
Hoisting operation.		<ul> <li>Rope and Pulley</li> <li>Chain Hoist</li> <li>Mobile Crane</li> <li>Electric Winch</li> <li>Tower crane</li> <li>Derrick Crane</li> <li>Overhead Gantry Crane</li> </ul>					
	2.3	Explain the use of equipment in 2.2 above. State safety precautions for the use of hoisting					
	2.5	equipment.  Recognize Mobile crane and Tower crane					
LO 3: Equipment	3.1	Explain compaction operation in construction					
used for compaction, concreting and laying operation.	3.2	List types of equipment used in compacting and laying operation:  • Vibrating Roller  • Power Rammer  • Paver, etc.					
	3.3	Explain the use of equipment in 3.2 above.					
	3.4	State safety precautions for the use of compacting equipment.					
	3.5	List construction equipment used in concreting: <ul> <li>Concrete batching and mixing plant</li> <li>Mobile concrete mixer</li> </ul>					

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA The learner can:		Evidence Type		Re	/ide ef. age		
	3.6	Explain the use of equipment in 3.5 above							
3.7		Recognize the following:      Vibrating Roller     Power Rammer     Paver     Mobile Concrete     mixer							

Learners Signature:	Date
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

**UNIT 005:** Daily Routine Checks

Unit reference number: CONST/CEO/OO5/L1

NSQ level: 1

Credit value: 5

Guided learning hours: 50

**Unit Purpose:** This unit is designed to provide the trainee with the knowledge and skills to carryout daily routine checks on Construction Equipment.

### **Unit Assessment Requirements/Evidence Requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is allowed in this unit and level.

- 1. Direct Observation (DO)
- 2. Question and Answer (QA)
- 3. Witness Testimony (WT)
- 4. Personal statement (PS) or Reflective Practice (RP)
- 5. Assignment (ASS)

UNIT 005: Daily Routine Checks

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA	vid ype	en	се	Re	ef.	end e No	
		The learner can:							
LO 1: Know daily routine	1.1	Explain daily routine Checks							
checks on Construction	1.2	State the importance of daily routine checks							
Equipment	1.3	Identify parts of equipment that require daily routine checks.							
	1.4	Explain how to carryout daily routine checks of Construction Equipment							
LO 2:	2.1	Check engine oil level							$\neg$
Carryout	2.2	Check the radiator water							
daily routine		level							
checks of	2.3	Check transmission oil							
Construction		level							
Equipment	2.4	Check the battery							
	2.5	Check tyres/tracks							
	2.6	Check hose for leakage							
	2.7	Check the diesel level							
LO 3: Report	3.1	State the importance of							
observations		reporting faults/problems to							
to operator		the operator							
	3.2	List common faults/ problems that can be observed from daily routine checks:  • Low oil level • Low water level • Low battery • Low diesel • Low tyre pressure • Worn-out bolts/nuts • Damaged electrical wires • Damaged hose, etc.							

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA The learner can:	Evidence Type		Туре			Re	/ide ef. age	
	3.3	Explain the safety precautions observed in carryout daily routine checks								
	3.4	Report observation verbally to the operator.								

Learners Signature:	Date
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

**UNIT 006:** Support Service (Duties of Operator Helper)

Unit reference number: CONST/CEO/OO6/L1

NSQ level: 1

Credit value: 6

**Guided learning hours: 60** 

**Unit Purpose:** This unit is designed to provide the Operator Helper with the knowledge and skills to support the Operator in the use of equipment before, during and after operations.

#### **Unit Assessment Requirements/Evidence Requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is allowed in this unit and level.

- 1. Direct Observation (DO)
- 2. Question and Answer (QA)
- 3. Witness Testimony (WT)
- 4. Personal statement (PS) or Reflective Practice (RP)
- 5. Assignment (ASS)

**UNIT 006:** Support Service (Duties of Operator Helper)

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA The learner can:	Evidence Type	Re	ride ef. ige	
LO 1: Understand support services to the operator for equipment before use	1.1	Explain the activities of support services for equipment before use:  • Daily checks • Report observations • Identify materials/tools required for work.				
	1.2	Perform daily routine checks.  Report observation from daily routine checks.				
	1.4	Select materials/tools required for work.				
	1.5	Apply health and safety precautions while carrying out daily routine checks.				
LO 2: Understand support services to operator for equipment	2.1	Perform ground support to the operator:				
while in use	2.2	Use signs or radio to communicate with operator.				
	2.3	Comply with health and safety precautions while performing ground support to the operator.				
LO 3: Understand support	3.1	Perform ground support to the operator while parking equipment after use.				

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA The learner can:	vid ype	_	се	Re	ef.	enc • No	
services to	3.2	Perform physical							
operator for		observation of equipment.							
equipment after use	3.3	Report observation to the operator.							
	3.4	Remove debris on wheel/tracks							
	3.5	<ul> <li>Carryout housekeeping for:</li> <li>Tools</li> <li>Construction</li></ul>							
	3.6	Dispose waste in accordance with environmental procedures.							
	3.7	Comply with health and safety precautions while carrying out support services after equipment use.							

IQA Signature (if sampled)  Date:	
Assessors Signature: Date:	
Learners Signature: Date	



# LIST OF PARTICIPANTS FOR THE ZERO DRAFT WORKSHOP FOR NATIONAL OCCUPATIONAL STANDARD (NOS) FOR CONSTRUCTION EQUIPMENT OPERATION HELD AT NBTE CONSULT NO. 9 KAJURU CLOSE U/RIMI GRA, KADUNA

# FROM 11th TO 17th SEPTEMBER, 2022

S/N	NAMES	Address	E-MAIL	PHONE NUMBER
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# LIST OF PARTICIPANTS AT THE CRITIQUE WORKSHOP FOR NATIONAL OCCUPATIONAL STANDARD (NOS) FOR CONSTRUCTION EQUIPMENT OPERATION HELD AT NBTE CONSULT NO. 9 KAJURU CLOSE U/RIMI GRA, KADUNA

# FROM 3<sup>RD</sup> TO 8<sup>TH</sup> OCTOBER, 2022

S/N	NAME	ADDRESS	PHONE NO.	E-MAIL
1.	Ahmed Sambo Abdulhameed	C1, PHE, Kaduna Polytechnic, Quarters, Kaduna	08023320941	Asabdulhameed11@gmail.com
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# LIST OF PARTICIPANTS AT THE VALIDATION WORKSHOP FOR NATIONAL OCCUPATIONAL STANDARD (NOS) FOR CONSTRUCTION EQUIPMENT OPERATION HELD AT NBTE CONSULT NO. 9 KAJURU CLOSE U/RIMI GRA, KADUNA ON 23<sup>RD</sup> -26<sup>TH</sup> OCTOBER, 2022

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