



NATIONAL BOARD FOR TECHNICAL EDUCATION

PLOT B BIDA ROAD, P.M.B. 2239, KADUNA, NIGERIA

IN COLLABORATION WITH



NATIONAL OCCUPATIONAL STANDARDS (NOS)

AGRICULTURAL EQUIPMENT OPERATION LEVELS 4 & 5

JUNE, 2026



**RENEWED HOPE
IN AGRICULTURE**

PREFACE

The development of the National Occupational Standards (NOS) for the agricultural sector marks another important milestone in Nigeria's commitment to strengthening Technical and Vocational Education and Training (TVET), promoting skills development, and improving workforce productivity. These standards have been developed to provide nationally recognized benchmarks for the knowledge, skills, and competencies required for effective performance in various agricultural occupations.

The National Occupational Standards were developed through a collaborative process involving industry experts, employers, professional bodies, regulatory agencies, training institutions, development partners, and other key stakeholders. Their contributions ensured that the standards reflect current industry practices, emerging technologies, and the competency requirements of the modern agricultural sector.

I wish to express my sincere appreciation to the Honourable Minister of Education for providing the policy direction that made this initiative possible. I also acknowledge the support of the Honourable Minister of Agriculture and Food Security and the Honourable Minister of Livestock Development for their commitment to advancing agricultural skills development in Nigeria.

I extend my profound gratitude to the Tertiary Education Trust Fund (TETFund) for its intervention and support, which facilitated the development of these National Occupational Standards. I also appreciate the invaluable contributions of the Sector Skills Council for Agriculture (SSC4A), members of the Implementation Committee, resource persons, industry practitioners, employers, professional associations, regulatory agencies, the French Embassy in Nigeria, development partners, and all stakeholders who contributed their expertise throughout the development process.

These National Occupational Standards will serve as an important reference for competency-based training, assessment, certification, apprenticeship, Recognition of Prior Learning (RPL), and workforce development within the agricultural sector. It is my expectation that all implementing institutions and industry partners will effectively utilize these standards to enhance the quality, relevance, and competitiveness of agricultural skills development in Nigeria.

I commend all stakeholders for their dedication and commitment to this important national assignment and look forward to the successful implementation of these National Occupational Standards for the benefit of the agricultural sector and the nation as a whole.

Professor Idris M. Bugaje, FNSE
Chairman, Implementation Committee

EXECUTIVE SECRETARY

National Board for Technical Education (NBTE), Kaduna

NATIONAL SKILLS QUALIFICATION (NSQ)

LEVEL 4

AGRICULTURAL EQUIPMENT OPERATION



JULY, 2026

GENERAL INFORMATION

OVERVIEW

This qualification is designed for individuals who are interested in pursuing a career in **Agricultural Equipment Operation** for the award of National Skills Qualifications (NSQ)/National Occupational Standards (NOS). It is aimed at producing competences necessary for Senior Forman in **Agricultural Equipment Operation, NSQ Level 4**.

This qualification is subject to review as and when the need arises.

QUALIFICATION PURPOSE

This qualification is designed to develop the learner into an Advanced Agricultural Equipment Operator and Supervisor, capable of operating complex tractors, implements and equipment, supervising teams of operators, planning and coordinating field machinery operations, calibrating equipment, carrying out preventive maintenance, troubleshooting common faults, and maintaining accurate documentation and reports.

QUALIFICATION OBJECTIVES

To achieve this qualification, the learner should be able to:

1. Demonstrate advanced occupational health, safety and environmental compliance;
2. Supervise agricultural equipment operation teams;
3. Coordinate field machinery operations;
4. Operate advanced tractor, implements and equipment;
5. Calibrate and adjust agricultural equipment;
6. Carry out preventive maintenance of agricultural machinery and implements;
7. Troubleshoot common operational faults in agricultural equipment;
8. Document, report and keep records of agricultural equipment operations;
9. Demonstrate workplace communication, team coordination and leadership;
10. Operate and supervise irrigation and water management equipment;
11. Operate and supervise post-harvest processing equipment;
12. Operate and supervise livestock mechanization equipment.

QUALIFICATION REQUIREMENTS

All learners must be:

- a. At least eighteen (20) years of age;
- b. Medically fit;
- c. Physically fit;
- d. Mentally fit (mental alertness);
- e. Have achieved the National Skills Qualification Agricultural Equipment Operation Level 3, or demonstrate equivalent competence;

- f. Have achieved all mandatory Occupational Health and Safety units at the lower levels;
- g. A Nigerian citizen;
- h. Other nationals (International passport, Residence permit);
- i. All of the above should be vetted.



NATIONAL SKILLS QUALIFICATION TABLE

MANDATORY UNITS

S/No	Reference Number	NOS Title	Credit Value	Guided Learning Hours	Practice Time
1.	AGR/AEO/001/L4	Advanced Occupational Health, Safety and Environmental Compliance	3	30	90
2.	AGR/AEO/002/L4	Supervision of Agricultural Equipment Operation Teams	4	40	120
3.	AGR/AEO/003/L4	Workplace Communication, Team Coordination and Leadership	3	30	90
4.	AGR/AEO/004/L4	Planning and Coordination of Field Machinery Operations	5	50	150
5.	AGR/AEO/005/L4	Advanced Tractor, Implement and Equipment Operation	5	50	150
6.	AGR/AEO/006/L4	Calibration and Adjustment of Agricultural Equipment	5	50	150
7.	AGR/AEO/007/L4	Preventive Maintenance of Agricultural Machinery and Implements	5	50	150
8.	AGR/AEO/008/L4	Troubleshooting of Common Operational Faults in Agricultural Equipment	5	50	150
9.	AGR/AEO/009/L4	Documentation, Reporting and Record Keeping in Agricultural Equipment Operations	3	30	90
SUBTOTAL (Mandatory Units)			38	380	1140

OPTIONAL UNITS (Learner to achieve 2 of the units listed below)

S/No	Reference Number	NOS Title	Credit Value	Guided Learning Hours	Practice Time
10	AGR/AEO/010/L4	Operation and Supervision of Irrigation and Water Management Equipment	4	40	120
11	AGR/AEO/011/L4	Operation and Supervision of Post-	4	40	120

S/No	Reference Number	NOS Title	Credit Value	Guided Learning Hours	Practice Time
		Harvest Processing Equipment			
12	AGR/AEO/012/L4	Operation and Supervision of Livestock Mechanization Equipment	4	40	120
SUBTOTAL (Optional Units)			12	120	360

QUALIFICATION STRUCTURE

This qualification comprises a total of twelve (12) Mandatory and optional Units, with a credit value of 12 and 120 Guided Learning Hours (GLH) across the full qualification. One (1) credit is equivalent to ten (10) GLH. Guided Learning Hours are the time a learner spends in the classroom, workshop and laboratory of the Skills Training Centre (STC), being taught, instructed, supervised or assessed by a qualified trainer, facilitator or assessor.

In addition to the GLH, the qualification requires at least twice or thrice the GLH as practice time. Practice time is the time a learner is expected to spend applying the skills of each unit in a real workplace environment, carrying out the same tasks repeatedly until performance becomes consistent, accurate and habitual to the standard the qualification demands. It is undertaken under the guidance of a workplace supervisor, recorded in the learner's logbook and duly endorsed. Practice time is the principal setting where core assessment is conducted. It is through repeated performance in the workplace that a learner's achievement of the Learning Outcomes and Performance Criteria is judged and evidenced. Practice time is an additional requirement to GLH and does not replace them.

To achieve this qualification, the learner must complete all mandatory units, undertake the prescribed practice time, and accumulate the minimum credit value approved by NBTE. Credit is awarded only when a learner has been assessed as competent against all Learning Outcomes and Performance Criteria of a unit.



Unit 001: Advanced Occupational Health, Safety and Environmental Compliance

Unit Reference Number: AGR/AEO/001/L4

Level: 4

Credit Value: 3

Guided Learning Hours: 30

Practice Time: 90

Unit Purpose:

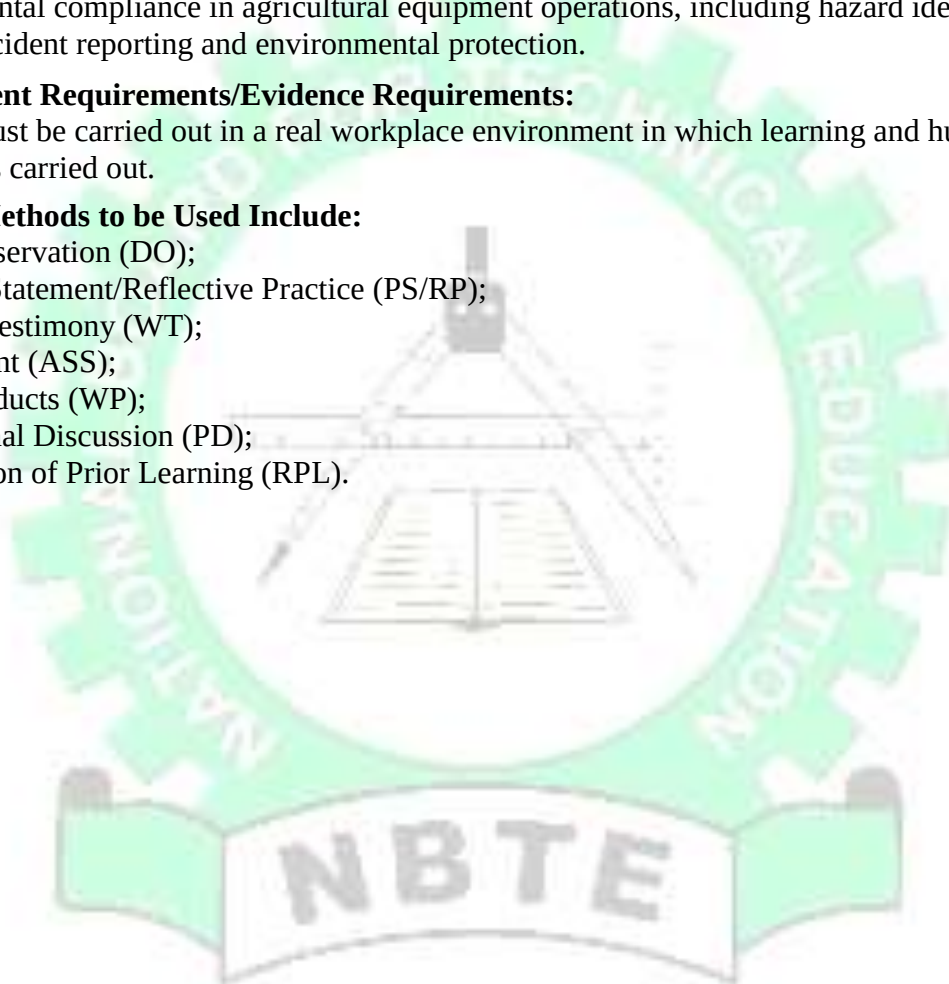
This unit is designed to equip learners with knowledge and skills to manage occupational health, safety and environmental compliance in agricultural equipment operations, including hazard identification, risk assessment, incident reporting and environmental protection.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).



Unit 001: Advanced Occupational Health, Safety and Environmental Compliance

LEARNING OUTCOME (LO) The learner will:		PERFORMANCE CRITERIA (PC) The learner can:	Evidence Type	Evidence Ref. Page No.
LO 1: <i>Carry out Risk assessment of agricultural equipment operations</i>	1.1	Identify hazards associated with agricultural equipment operations.		
	1.2	Assess the level of risk associated with identified hazards.		
	1.3	Initiate control measures for identified risks.		
	1.4	Document risk assessment findings.		
LO 2: <i>Implement safety control measures</i>	2.1	Review appropriate control measures for specific equipment hazards.		
	2.2	Supervise the use of Personal Protective Equipment (PPE) among operation team members.		
	2.3	Monitor compliance with safety procedures during equipment operation.		
	2.4	Carry out safety audits of equipment operation sites.		
LO 3: <i>Manage environmental compliance in agricultural equipment operations</i>	3.1	Observe environmental regulations relevant to agricultural equipment operations.		
	3.2	Monitor equipment operations for compliance with environmental regulations.		
	3.3	Implement measures to minimize the environmental impact of equipment operations		
	3.4	Report environmental compliance status to the appropriate authority		
LO 4: <i>Respond to and report safety incidents</i>	4.1	Recognize types of safety incidents in agricultural equipment operations		
	4.2	Use first aid and emergency response procedures		
	4.3	Investigate the causes of safety incidents		
	4.4	Document safety incidents to the appropriate authority		
	4.5	Report safety incidents to the appropriate authority		
	4.6	Initiate corrective and preventive actions following an incident		

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQAM Signature (if sampled):

Date:

EQAM Signature (if sampled):

Date:



Unit 002: Supervision of Agricultural Equipment Operation Teams

Unit Reference Number: AGR/AEO/002/L4

Level: 4

Credit Value: 4

Guided Learning Hours: 40

Practice Time: 120

Unit Purpose:

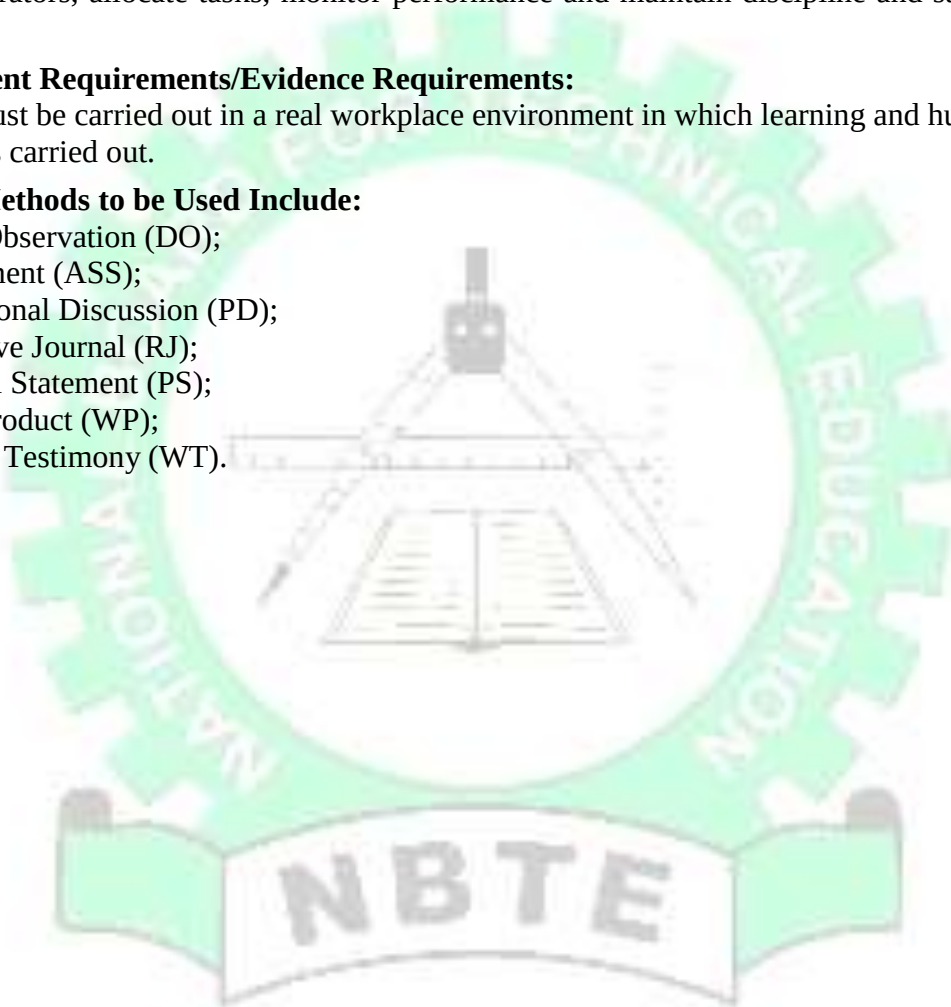
This unit is designed to equip learners with knowledge and skills to supervise teams of agricultural equipment operators, allocate tasks, monitor performance and maintain discipline and safety within the team.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Assignment (ASS);
3. Professional Discussion (PD);
4. Reflective Journal (RJ);
5. Personal Statement (PS);
6. Work Product (WP);
7. Witness Testimony (WT).



Unit 002: Supervision of Agricultural Equipment Operation Teams

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. Page No.			
The learner will:		The learner can:								
LO 1: <i>Organize agricultural equipment operation teams</i>	1.1	Identify the roles and responsibilities of team members.								
	1.2	Categorise operators' skills and competence to operational tasks.								
	1.3	Organize work schedules for the operation team.								
	1.4	Communicate team structure and reporting lines to team members.								
LO 2: <i>Allocate tasks among team members</i>	2.1	Mobilize individuals into teams.								
	2.2	Assign equipment operation tasks to teams.								
	2.3	Monitor progress of assigned tasks.								
	2.4	Review performance targets for assigned tasks.								
	2.5	Discuss feedback to team members on task performance.								
LO 3: <i>Supervise team performance and discipline</i>	3.1	Monitor compliance with operational procedures and safety rules.								
	3.2	Identify poor performance or misconduct.								
	3.3	Carryout organizational disciplinary procedures where necessary.								
	3.4	Recognize good performance within the team.								
LO 4: <i>Carry out Toolbox talks and briefings</i>	4.1	Carryout toolbox talks for daily operational activities.								
	4.2	Communicate safety and operational instructions clearly to the team.								
	4.3	Review outcomes of toolbox talks and briefings								

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQAM Signature (if sampled):

Date:

EQAM Signature (if sampled):

Date:

Unit 003: Workplace Communication, Team Coordination and Leadership

Unit Reference Number: AGR/AEO/003/L4

Level: 4

Credit Value: 3

Guided Learning Hours: 30

Practice Time: 90 hours

Unit Purpose:

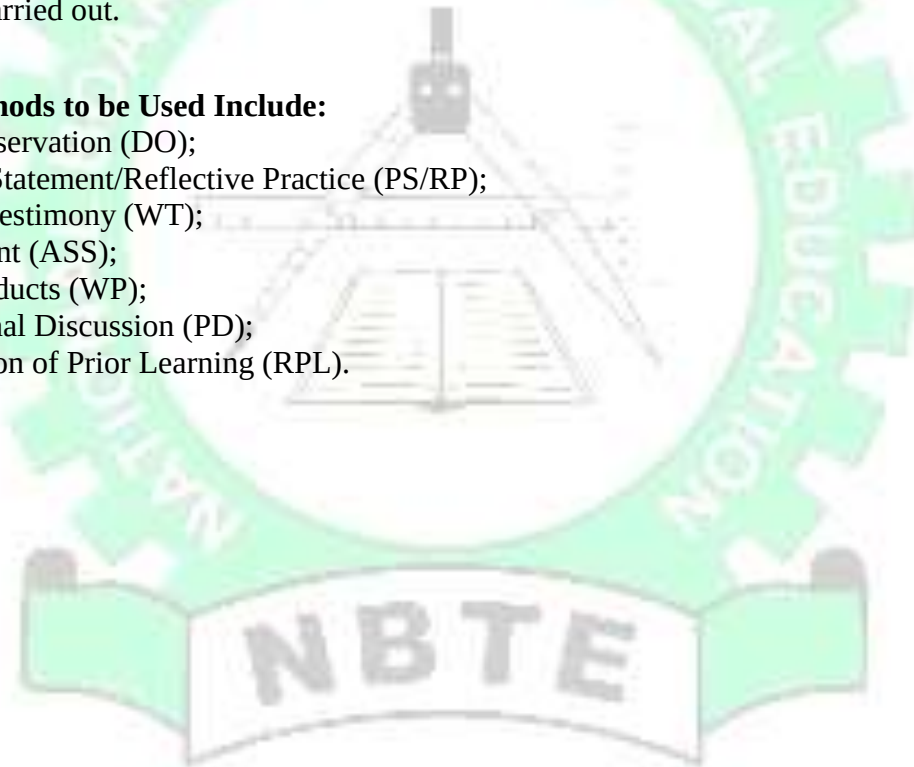
This unit is designed to equip learners with knowledge and skills to communicate effectively, coordinate team members and demonstrate leadership in agricultural equipment operations.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).



Unit 003: Workplace Communication, Team Coordination and Leadership

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Effective workplace communication</i>	1.1	Communicate operational instructions clearly to team members		
	1.2	Use appropriate channels for routine and emergency communication		
	1.3	Interact with team members to gather feedback		
	1.4	Communicate effectively with supervisors and other departments		
LO 2: <i>Organise Team Activities</i>	2.1	Organise the activities of team members to achieve operational targets		
	2.2	Guide cooperation among team members from different work areas		
	2.3	Address scheduling conflicts among team activities		
	2.4	Monitor team coordination to ensure smooth workflow		
LO 3: <i>Demonstrate Leadership Qualities</i>	3.1	Maintain integrity and accountability in carrying out assigned duties		
	3.2	Guide team members towards achieving operational goals		
	3.3	Demonstrate compliance with safety and operational procedures through personal example		
	3.4	Support the professional development of team members		
LO 4: <i>Manage workplace conflict</i>	4.1	Identify sources of conflict within the operation team		
	4.2	Implement appropriate conflict resolution techniques		
	4.3	Address disputes between team members		
	4.4	Communicate unresolved conflicts to the appropriate authority		

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQAM Signature (if sampled):

Date:

EQAM Signature (if sampled):

Date:



Unit 004: Planning and Coordination of Field Machinery Operations

Unit Reference Number: AGR/AEO/004/L4

Level: 4

Credit Value: 5

Guided Learning Hours: 50

Practice Time: 150 hours

Unit Purpose:

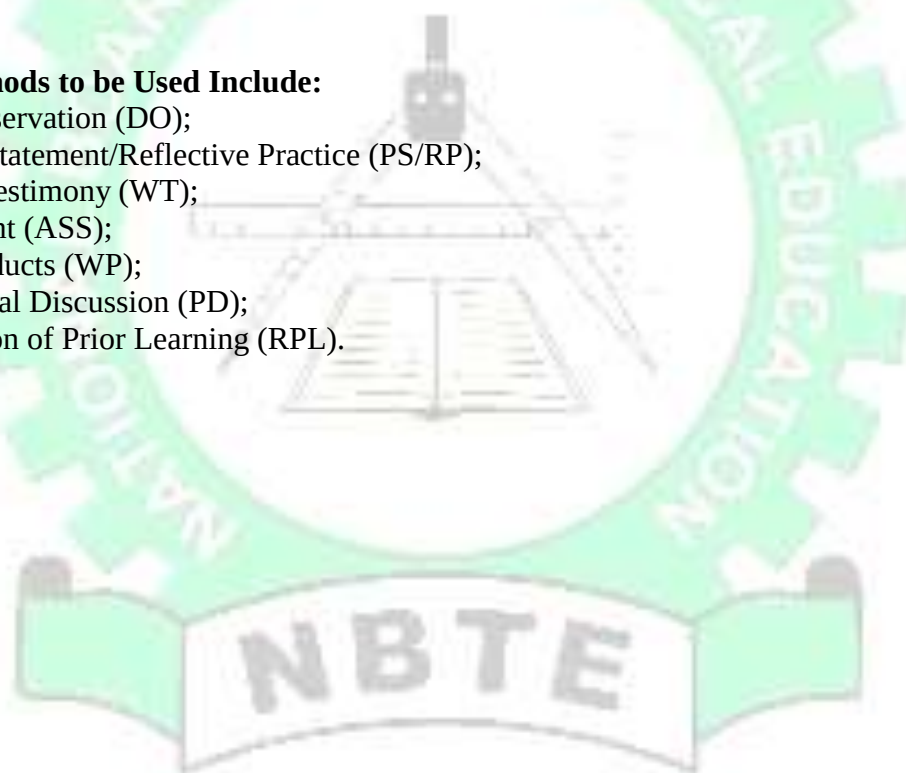
This unit is designed to equip learners with knowledge and skills to plan and coordinate field machinery operations to ensure efficient use of equipment, time and resources.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).



Unit 004: Planning and Coordination of Field Machinery Operations

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Plan field machinery operations</i>	1.1	Assess field conditions relevant to machinery operations.		
	1.2	Provide equipment and resource requirements for planned operations.		
	1.3	Develop a schedule for field machinery operations.		
	1.4	Identify contingencies that may affect the operation plan.		
LO 2: <i>Coordinate deployment of equipment and operators</i>	2.1	Provide equipment to operators based on the operation plan.		
	2.2	Mobilize the movement of equipment to operation site.		
	2.3	Communicate the operation plan to relevant stakeholders.		
	2.4	Modify deployment arrangements in response to changing field conditions.		
LO 3: <i>Monitor execution of field machinery operations</i>	3.1	Review progress of field machinery operations against the schedule		
	3.2	Identify delays or deviations from the operation plan		
	3.3	Implement corrective action to address delays or deviations		
	3.4	Communicate operational progress to supervisors and stakeholders		
LO 4: <i>Evaluate the outcome of field operations</i>	4.1	Compare actual operation outcomes with planned targets		
	4.2	Identify factors that affected the achievement of operation targets		
	4.3	Compile lessons learnt from the field operation		
	4.4	State improvements for future field machinery operations		

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQAM Signature (if sampled):

Date:

EQAM Signature (if sampled):

Date:



UNIT 005: ADVANCED TRACTOR, IMPLEMENT AND EQUIPMENT OPERATION

Unit Reference Number: AGR/AEO/005/L4

Level: 4

Credit Value: 5

Guided Learning Hours: 50

Practice Time: 150 hours

Unit Purpose:

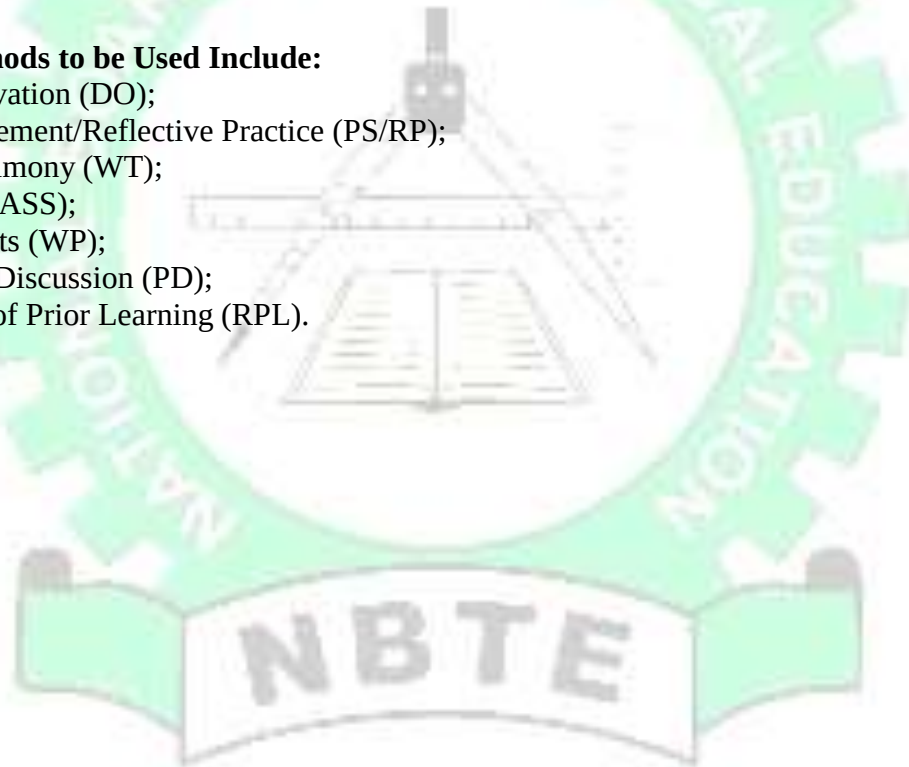
This unit is designed to equip learners with knowledge and skills to operate tractors, implements and equipment under varied and challenging field conditions.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).



Unit 005: Advanced Tractor, Implement and Equipment Operation

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type					Evidence Ref. Page No.				
The learner will:		The learner can:										
LO 1: <i>Carry Out Tractors and Implements Operations under varied field conditions</i>	1.1	Assess field conditions before commencing tractor operations.										
	1.2	Use appropriate gear and speed for varying field and soil conditions.										
	1.3	Operate the tractor and implements on sloped terrain.										
	1.4	Operate the tractor and implements on uneven terrain.										
	1.5	Operate the tractor and implements on wet terrain.										
	1.6	Perform defensive operating techniques to minimize equipment and crop damage.										
LO 2: <i>Carry Out Advanced Hitching and Coupling of Implements</i>	2.1	Use the appropriate hitching method for different categories of implements.										
	2.2	Hitch and couple complex or multiple implements to the tractor.										
	2.3	Assess the correct alignment and security of hitched implements.										
	2.4	Carry out adjustments to hitched implements for optimal performance.										
LO 3: <i>Optimize equipment operation for efficiency and Field Output</i>	3.1	Implement the optimal travel speed and operational pattern for the task.										
	3.2	Rectify overlap and skips during field operations.										
	3.3	Monitor fuel consumption and operational efficiency.										
	3.4	Review operating parameters to improve field output.										
LO 4: <i>Carry out Post-operation Procedures</i>	4.1	Inspect the tractor, implement and equipment after operation.										
	4.2	Maintain equipment after use.										
	4.3	Report operational hours and fuel usage.										
	4.4	Communicate operational issues observed during use.										

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQAM Signature (if sampled):

Date:

EQAM Signature (if sampled):

Date:



UNIT 006: CALIBRATION AND ADJUSTMENT OF AGRICULTURAL EQUIPMENT

Unit Reference Number: AGR/AEO/006/L4

Level: 4

Credit Value: 5

Guided Learning Hours: 50

Practice Time: 150 hours

Unit Purpose:

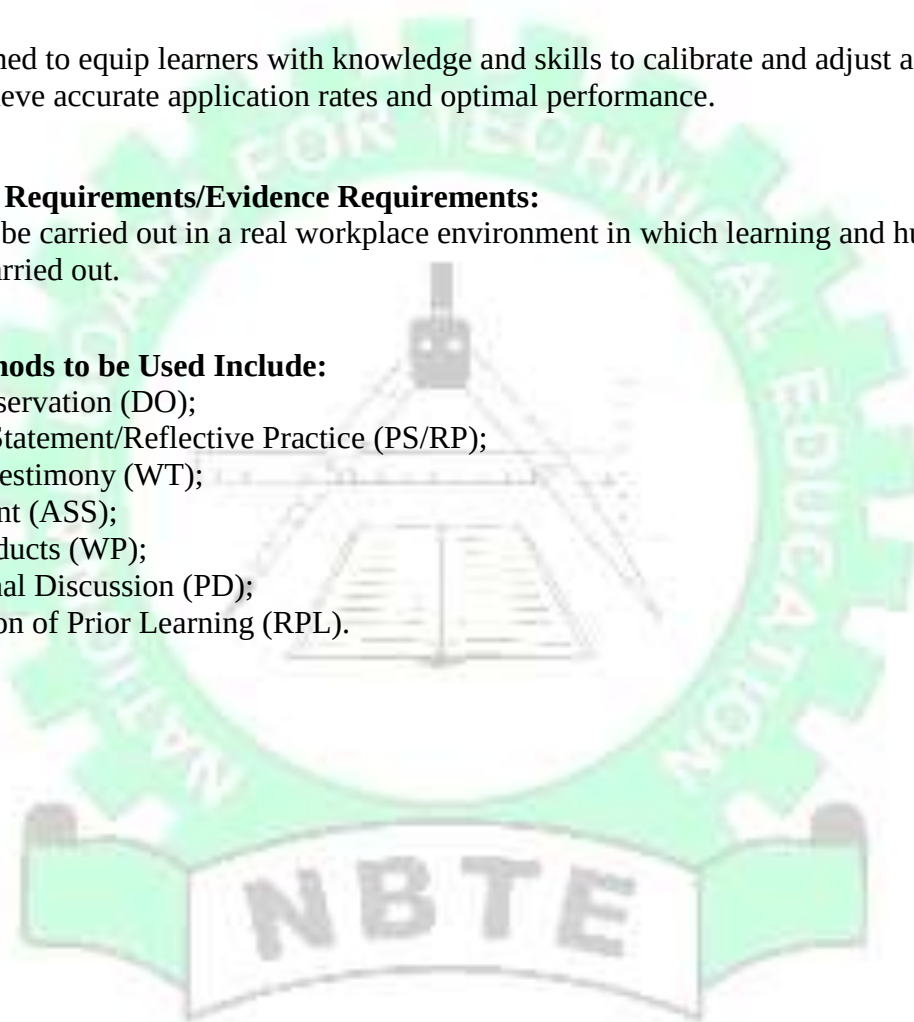
This unit is designed to equip learners with knowledge and skills to calibrate and adjust agricultural equipment to achieve accurate application rates and optimal performance.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).



Unit 006: Calibration and Adjustment of Agricultural Equipment

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. Page No.			
The learner will:		The learner can:								
LO 1: <i>Identify the principles of equipment calibration</i>	1.1	Explain the importance of calibration in agricultural equipment operation.								
	1.2	Describe equipment parameters that require calibration.								
	1.3	Determine tools and instruments used for calibration.								
	1.4	Interpret manufacturer's calibration charts and manuals.								
LO 2: <i>Calibrate seeding and planting equipment</i>	2.1	Evaluate the desired seed or plant population rate.								
	2.2	Perform seed metering mechanism calibration to achieve the desired seed rate.								
	2.3	Review calibration accuracy through test runs.								
	2.4	Modify calibration to correct deviations from the desired rate.								
LO 3: <i>Calibrate sprayers and fertilizer application equipment</i>	3.1	Identify the desired application rate for chemicals or fertilizer.								
	3.2	Calibrate nozzle output or spreader setting to achieve the desired rate.								
	3.3	Confirm calibration accuracy through test runs.								
	3.4	Modify calibration to correct deviations from the desired rate.								
LO 4: <i>Carry out adjustment of harvesting and processing equipment</i>	4.1	Identify adjustable components of harvesting.								
	4.2	Identify adjustable components of processing equipment.								
	4.3	Modify concave clearance, cylinder speed and sieve settings.								
	4.4	Observe equipment performance after adjustment.								
	4.5	Maintain calibration and adjustment records.								

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQAM Signature (if sampled):

Date:

EQAM Signature (if sampled):

Date:



UNIT 007: PREVENTIVE MAINTENANCE OF AGRICULTURAL MACHINERY AND IMPLEMENTS

Unit Reference Number: AGR/AEO/007/L4

Level: 4

Credit Value: 5

Guided Learning Hours: 50

Practice Time: 150 hours

Unit Purpose:

This unit is designed to equip learners with knowledge and skills to carry out preventive maintenance of agricultural machinery and implements in order to reduce breakdown and extend equipment shelf life.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).



Unit 007: Preventive Maintenance of Agricultural Machinery and Implements

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. Page No.			
The learner will:		The learner can:								
LO 1: <i>Develop preventive maintenance schedule</i>	1.1	Identify maintenance requirements specified by the equipment manufacturer.								
	1.2	Carry out maintenance intervals based on operating hours or usage.								
	1.3	Develop a preventive maintenance schedule for the equipment fleet.								
	1.4	Communicate the maintenance schedule to relevant personnel.								
LO 2: <i>Carry out routine servicing of agricultural machinery</i>	2.1	Carry out pre-service inspection of machinery.								
	2.2	Perform routine servicing tasks according to the maintenance schedule.								
	2.3	Confirm the appropriateness of tasks carried out above.								
	2.4	Document servicing activities carried out.								
LO 3: <i>Carry out routine servicing on lubricating parts and fluid management</i>	3.1	Identify lubrication points on agricultural machinery and implements.								
	3.2	Identify appropriate lubricants and fluids for the equipment.								
	3.3	Carry out lubrication according to the manufacturer's recommendation.								
	3.4	Check and top up fluid levels, including engine oil, coolant and hydraulic fluid.								
LO 4: <i>Replace consumable parts</i>	4.1	Identify wear-prone parts such as blades, belts and tyres								
	4.2	Review when consumable parts require replacement								
	4.3	Replace worn or damaged consumable parts								
	4.4	Dispose of used parts and materials in accordance with safety and environmental requirements								

Learner's Signature:

Date:

Assessor's Signature:

Date:

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		

IQAM Signature (if sampled):

Date:

EQAM Signature (if sampled):

Date:



UNIT 008: TROUBLESHOOTING OF COMMON OPERATIONAL FAULTS IN AGRICULTURAL EQUIPMENT

Unit Reference Number: AGR/AEO/008/L4

Level: 4

Credit Value: 5

Guided Learning Hours: 50

Practice Time: 150 hours

Unit Purpose:

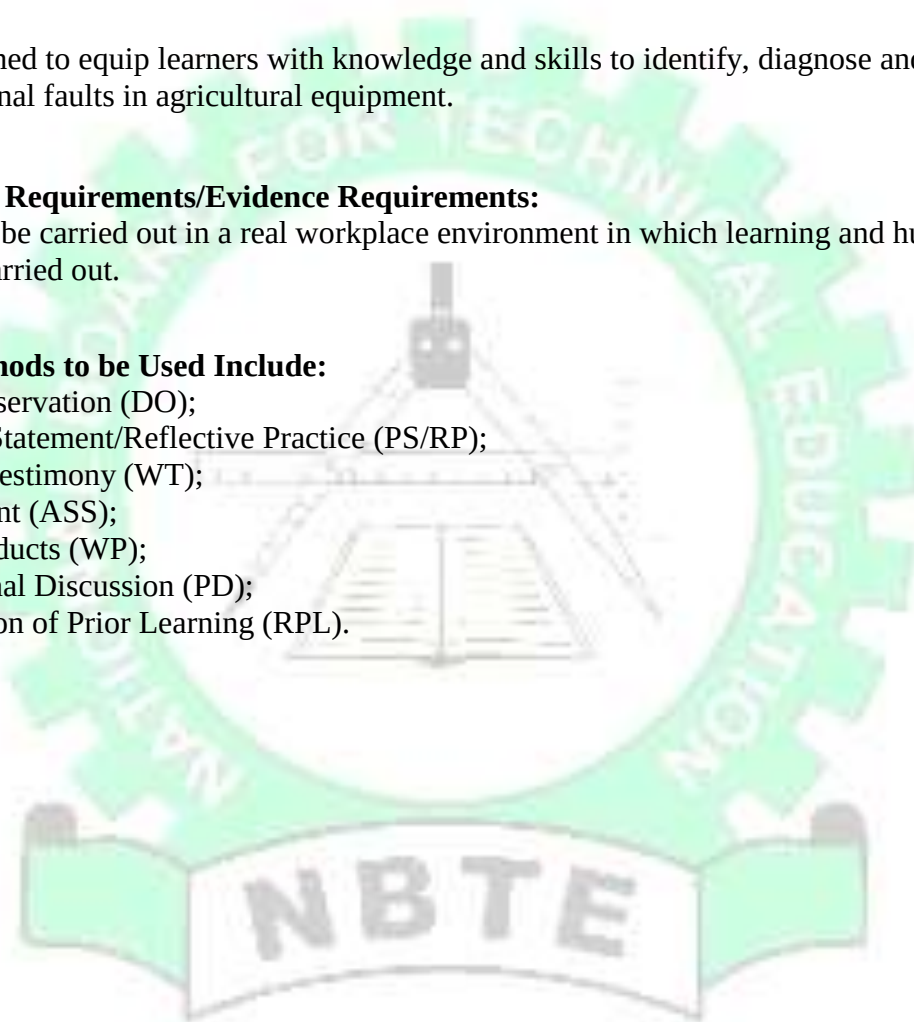
This unit is designed to equip learners with knowledge and skills to identify, diagnose and rectify common operational faults in agricultural equipment.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).



Unit 008: Troubleshooting of Common Operational Faults in Agricultural Equipment

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type					Evidence Ref. Page No.			
The learner will:		The learner can:									
LO 1: <i>Identify common operational faults in agricultural equipment</i>	1.1	Explain common equipment malfunctions and faults									
	1.2	Describe faults related to engine performance									
	1.3	Discuss faults related to hydraulic, cooling, transmission and electrical systems									
	1.4	Discuss faults related to implement performance									
LO 2: <i>Diagnose the causes of identified faults</i>	2.1	Use diagnostic checklists to investigate identified faults									
	2.2	Carry out basic checks to isolate the probable cause of a fault									
	2.3	Use equipment manuals and technical references during diagnosis									
	2.4	Compile diagnostic findings									
LO 3: <i>Rectify operational faults</i>	3.1	Carry out minor repairs and adjustments on agricultural equipment									
	3.2	Replace faulty components of agricultural equipment e.g. Fuel pumps, fuel filters, belts etc.									
	3.3	Observe equipment performance after replacement									
	3.4	Observe health and safety requirements during fault rectification									
LO 4: <i>Report faults beyond scope of competence to appropriate personnel</i>	4.1	State faults that require specialist or Superior's attention									
	4.2	Report faults beyond scope of competence to appropriate personnel									
	4.3	State the procedure of reporting faults of the affected equipment									
	4.4	Follow up on the status of referred faults									

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQAM Signature (if sampled):

Date:

EQAM Signature (if sampled):

Date:



Unit 009: Documentation, Reporting and Record Keeping in Agricultural Equipment Operations

Unit Reference Number: AGR/AEO/009/L4

Level: 4

Credit Value: 3

Guided Learning Hours: 30

Practice Time: 90 hours

Unit Purpose:

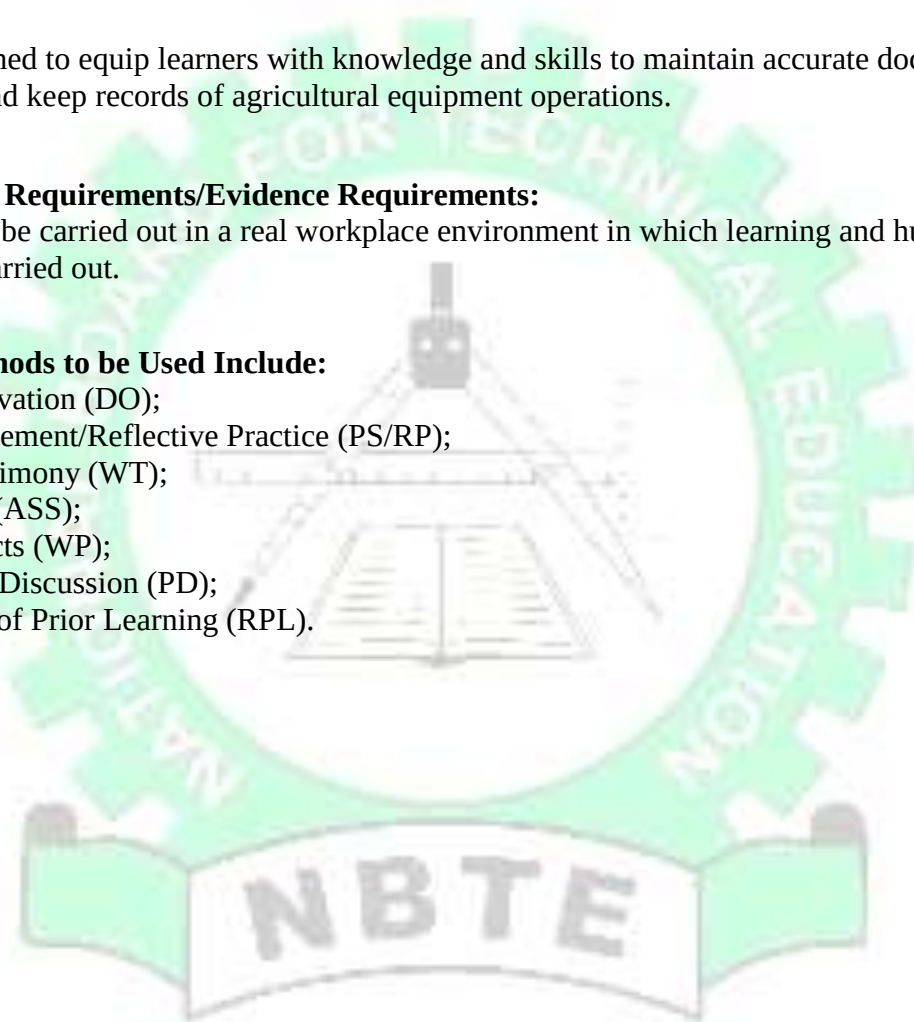
This unit is designed to equip learners with knowledge and skills to maintain accurate documentation, prepare reports and keep records of agricultural equipment operations.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).



Unit 009: Documentation, Reporting and Record Keeping in Agricultural Equipment Operations

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type					Evidence Ref. Page No.			
The learner will:		The learner can:									
LO 1: <i>Maintain operational records of agricultural equipment</i>	1.1	State types of operational records required in agricultural equipment operations									
	1.2	Compile daily equipment usage, including operating hours and fuel consumption									
	1.3	Compile field operations carried out, including area covered and output									
	1.4	Maintain accuracy and completeness of operational records									
LO 2: <i>Compile reports on equipment operations</i>	2.1	Compile information for periodic operation reports									
	2.2	Compile reports in the required format									
	2.3	Deliver reports within stipulated timelines to the appropriate authority									
	2.4	Address to queries arising from submitted reports									
LO 3: <i>Maintain inventory and maintenance records</i>	3.1	Compile maintenance activities carried out on equipment									
	3.2	Maintain an inventory of spare parts and consumables									
	3.3	Maintain equipment history records following repairs or servicing									
	3.4	Maintain records in both manual and electronic formats as required									
LO 4: <i>Manage documentation in compliance with organizational policy</i>	4.1	Ensure organizational document control procedures									
	4.2	Maintain confidentiality of sensitive operational records									
	4.3	Archive records in accordance with organizational policy									
	4.4	Locate records promptly when required for review or audit									

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQAM Signature (if sampled):

Date:

EQAM Signature (if sampled):

Date:



Unit 010: Operation and Supervision of Irrigation and Water Management Equipment

Unit Reference Number: **AGR/AEO/010/L4**

Level: 4

Credit Value: 4

Guided Learning Hours: 40

Practice Time: 120 hours

Unit Purpose:

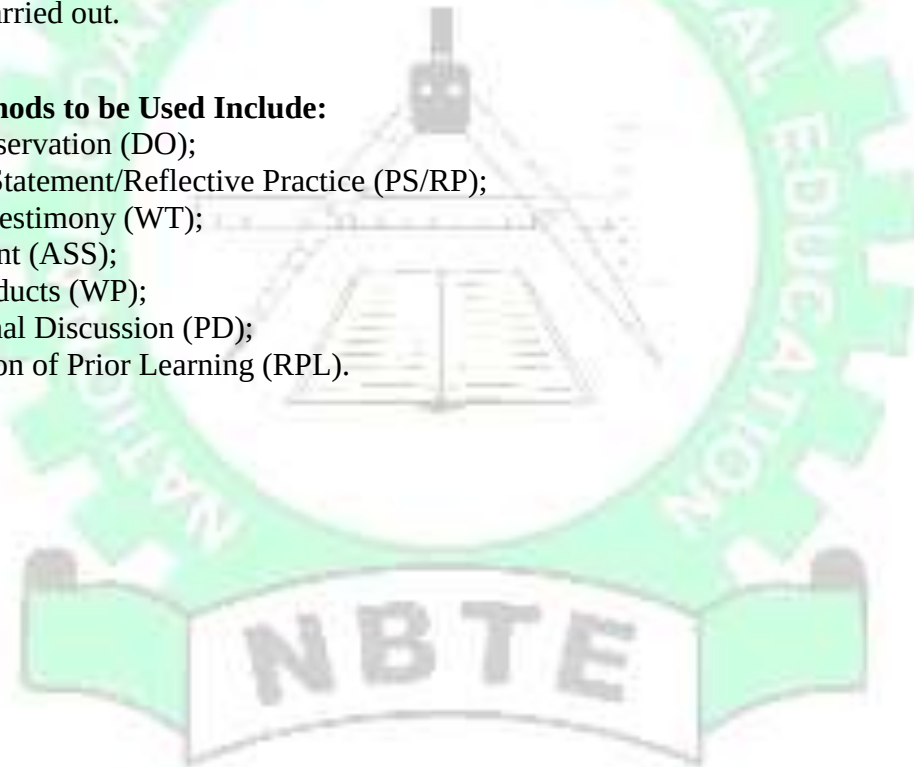
This unit is designed to equip learners with knowledge and skills to operate and supervise irrigation and water management equipment for efficient water use in agricultural production.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).



Unit 010: Operation and Supervision of Irrigation and Water Management Equipment

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA (PC)	Evidence Type					Evidence Ref. Page No.			
The learner will:		The learner can:									
LO 1: <i>Interpret irrigation and water management systems</i>	1.1	Describe types of irrigation systems used in agricultural production									
	1.2	Describe the components of irrigation and water management equipment									
	1.3	Explain factors affecting selection of an irrigation system									
	1.4	Identify water sources and water conveyance structures									
LO 2: <i>Operate irrigation equipment</i>	2.1	Carry out irrigation equipment installation									
	2.2	Operate pumping units for water supply									
	2.3	Operate sprinkler, drip or surface irrigation systems									
	2.4	Monitor irrigation equipment during operation									
LO 3: <i>Supervise irrigation scheduling and water application</i>	3.1	Determine crop water requirements									
	3.2	Develop an irrigation schedule based on crop and soil conditions									
	3.3	Supervise application of water according to the irrigation schedule									
	3.4	Modify the irrigation schedule in response to weather and field conditions									
LO 4: <i>Maintain irrigation and water management equipment</i>	4.1	Inspect irrigation equipment for leaks, blockages and wear									
	4.2	Carry out routine cleaning and unblocking of irrigation lines and emitters									
	4.3	Carry out minor repairs of irrigation equipment									
	4.4	Keep records of irrigation equipment and maintenance									

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQAM Signature (if sampled):

Date:

EQAM Signature (if sampled):

Date:



Unit 011: Operation and Supervision of Post-Harvest Processing Equipment

Unit Reference Number: AGR/AEO/011/L4

Level: 4

Credit Value: 4

Guided Learning Hours: 40

Practice Time: 120 hours

Unit Purpose:

This unit is designed to equip learners with knowledge and skills to operate and supervise post-harvest processing equipment in order to minimize losses and maintain product quality.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).

Unit 011: Operation and Supervision of Post-Harvest Processing Equipment

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Understand post-harvest processing operations</i>	1.1	Describe post-harvest processing operations for major crops		
	1.2	Describe equipment used in post-harvest processing		
	1.3	Explain factors that affect post-harvest losses		
	1.4	Discuss quality parameters relevant to post-harvest processing		
LO 2: <i>Operate post-harvest processing equipment</i>	2.1	Couple post-harvest processing equipment for operation		
	2.2	Test run post-harvest processing equipment		
	2.3	Perform calibration checks to ensure precision accuracy		
	2.4	Carry out post-harvest processing operations		
	2.5	Monitor equipment performance during processing		
LO 3: <i>Supervise post-harvest handling and quality control</i>	3.1	Supervise handling of produce to minimize loss, damages and contamination		
	3.2	Monitor moisture content and other quality parameters during processing operation		
	3.3	Supervise grading and packaging of processed produce		
	3.4	Propose corrective action where quality parameters are not met		
LO 4: <i>Maintain post-harvest processing equipment</i>	4.1	Inspect post-harvest processing equipment before and after use		
	4.2	Carry out cleaning and sanitation of processing equipment		
	4.3	Carry out routine maintenance of processing equipment		
	4.4	Keep accurate records of maintenance and hygiene activities for processing equipment		
LO 5:	5.1	Carry out produce packaging using		

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
<i>Carry out packaging, storage and record keeping for post-harvest processing operation</i>		appropriate materials		
	5.2	Carry out storage under recommended environmental conditions (temperature, humidity, ventilation)		
	5.3	Label products and maintain records of processing activities, quantity, and quality checks		
	5.4	Carry out quality control and assurance		

Learner's Signature:

Date:

Assessor's Signature:

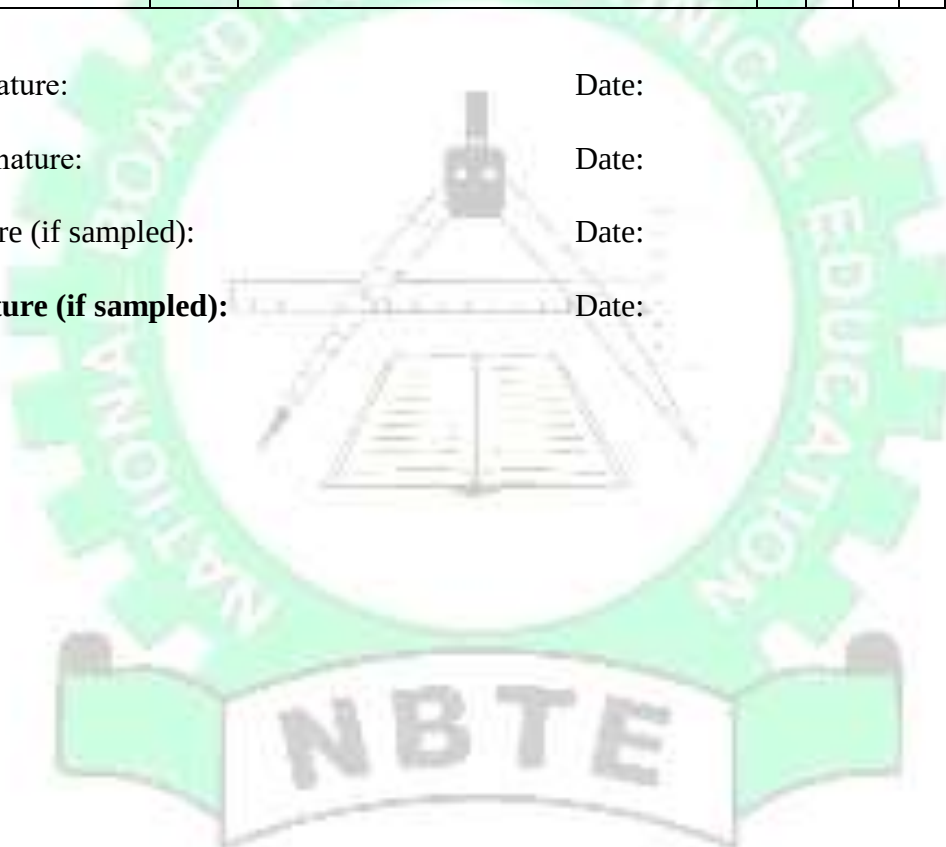
Date:

IQAM Signature (if sampled):

Date:

EQAM Signature (if sampled):

Date:



Unit 012: Supervision and Operation of Livestock Mechanization Equipment

Unit Reference Number: AGR/AEO/012/L4

Level: 4

Credit Value: 4

Guided Learning Hours: 40

Practice Time: 120 hours

Unit Purpose:

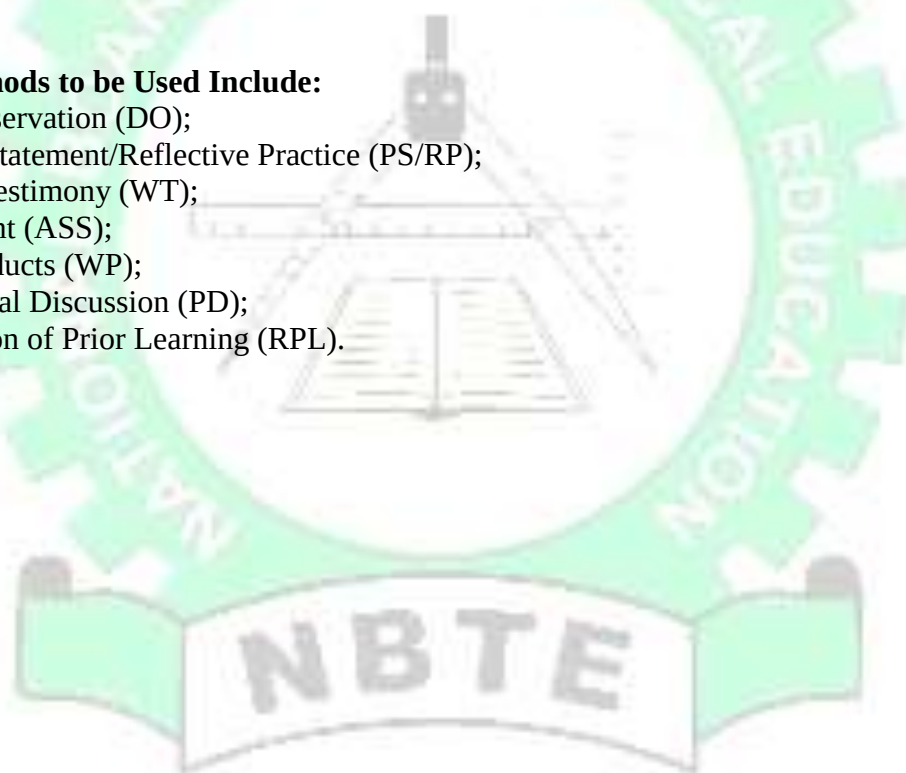
This unit is designed to equip learners with knowledge and skills to operate and supervise mechanized livestock equipment, including feeding, watering and waste management systems.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).



Unit 012: Operation and Supervision of Livestock Mechanization Equipment

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. Page No.			
The learner will:		The learner can:								
LO 1: <i>Identify livestock mechanization systems</i>	1.1	Identify types of livestock mechanization equipment								
	1.2	Describe the functions of livestock mechanization equipment								
	1.3	Explain factors affecting the selection of livestock mechanization equipment								
	1.4	Identify safety considerations in livestock mechanization								
LO 2: <i>Operate livestock feeding and watering equipment</i>	2.1	Couple automated feeding and watering systems for operation								
	2.2	Operate automated feeding and watering systems								
	2.3	Monitor feed and water delivery for adequacy and consistency								
	2.4	Carry out troubleshooting of minor faults in feeding and watering equipment								
LO 3: <i>Operate livestock waste management equipment</i>	3.1	Operate manure handling and removal equipment								
	3.2	Operate waste treatment or biogas equipment where applicable								
	3.3	Demonstrate health and safety in operating waste management equipment								
	3.4	Carry out routine cleaning of waste management equipment								
LO 4: <i>Supervise livestock mechanization operations</i>	4.1	Supervise operators of livestock mechanization equipment								
	4.2	Monitor compliance with bio-security and hygiene protocols								
	4.3	Maintain records of livestock mechanization equipment performance								
	4.4	Communicate equipment malfunction concerns to the appropriate authority								
LO 5: <i>Understand Equipment and Machinery Operations</i>	5.1	Operate livestock mechanization equipment such as tractors, bailers, mixer, feeders safely and efficiently								
	5.2	Follow standard operating procedures for equipment start up, shutdown and maintenance								

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
	5.3	Monitor equipment performance and adjust as necessary to achieve optimal results		
	5.4	Report any equipment malfunctions or issues to appropriate authority		

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQAM Signature (if sampled):

Date:

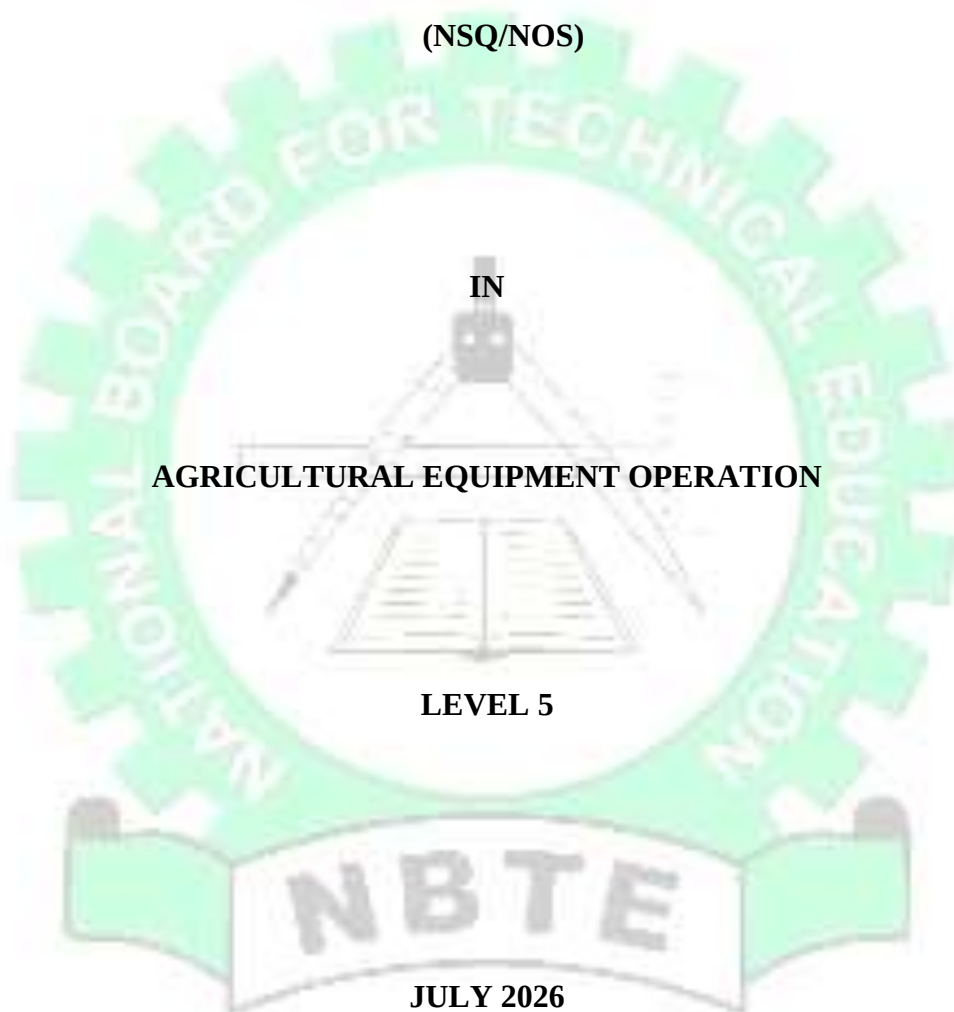
EQAM Signature (if sampled):

Date:





**NATIONAL SKILLS QUALIFICATIONS/NATIONAL OCCUPATIONAL STANDARDS
(NSQ/NOS)**



JULY 2026

GENERAL INFORMATION

OVERVIEW

This qualification is designed for individuals who are interested in pursuing a career in **Agricultural Equipment Operations** for the award of National Skills Qualification (NSQ)/National Occupational Standards (NOS). It is aimed at producing competencies necessary to supervise, coordinate, and plan Agricultural Equipment Operations at **NSQ Level 5**.

This qualification is subject to review as and when the need arises.

QUALIFICATION PURPOSE

The qualification is designed to produce competent Agricultural Equipment Operations Senior Foreman with knowledge, skills, and attitude required to supervise, coordinate, and evaluate Agricultural Equipment activities using modern Agricultural Equipment techniques, precision agriculture principles, appropriate tools and equipment.

QUALIFICATION OBJECTIVES

To achieve this qualification, the learner should be able to:

1. Manage agricultural equipment operations;
2. Develop equipment operation plans and schedules;
3. Coordinate machinery fleet and allocate resources;
4. Monitor quality assurance and compliance in agricultural equipment operation;
5. Carry out advanced diagnostics and fault management;
6. Plan maintenance and coordinate workshop activities;
7. Manage risk and environmental sustainability in mechanized agriculture;
8. Provide leadership, supervision and coordination of agricultural equipment operation personnel;
9. Provide training, mentoring and assessment support for lower-level operators;
10. Manage data, digital records and reporting for agricultural machinery operations;
11. Control cost, monitor productivity and drive operational improvement;

QUALIFICATION REQUIREMENTS

All learners must:

- a. Be at least twenty-one (21) years of age;
- b. Be medically fit;
- c. Be physically fit;
- d. Be mentally fit (mental alertness);
- e. Have achieved the National Skills Qualification Agricultural Equipment Operation Level 4, or demonstrate equivalent competence;
- f. Have a minimum of two (2) years of relevant supervisory experience in agricultural equipment operation, where applicable;
- g. Be a Nigerian citizen;
- h. Other nationals (International passport, residence permit);
- i. Be vetted.

NATIONAL SKILLS QUALIFICATION TABLE

MANDATORY UNITS

S/No	Reference Number	NOS Title	Credit Value	Guided Learning Hours	Practice Time
1.	AGR/AEO/001/L5	Communication in Agricultural Equipment Operation	3	30	90
2.	AGR/AEO/002/L5	Team work in Agricultural Equipment Operation	3	30	90
3.	AGR/AEO/003/L5	Occupational Health and Agricultural Equipment Operation	3	30	90
4.	AGR/AEO/004/L5	Management of Agricultural Equipment Operations	5	50	200
5.	AGR/AEO/005/L5	Development of Equipment Operation Plans and Schedules	5	50	200
6.	AGR/AEO/006/L5	Machinery Fleet Coordination and Resource Allocation	5	50	200
7.	AGR/AEO/007/L5	Quality Assurance and Compliance Monitoring in Agricultural Equipment Operation	6	60	240
8.	AGR/AEO/008/L5	Advanced Diagnostics and Fault Management	7	70	290
9.	AGR/AEO/009/L5	Maintenance Planning and Workshop Coordination	6	60	240
10.	AGR/AEO/010/L5	Risk Management and Environmental Sustainability in Mechanised Agriculture	4	40	190
11.	AGR/AEO/011/L5	Leadership, Supervision and Coordination of Agricultural Equipment Operation Personnel	4	40	190
SUBTOTAL (Mandatory Units)			51	510	2020

OPTIONAL UNITS (Learner to achieve 2 of the units listed below)

S/No	Reference Number	NOS Title	Credit Value	Guided Learning Hours	Practice Time
12	AGR/AEO/012/L5	Training, Mentoring and Assessment Support for Lower-Level Operators	7	70	210
13	AGR/AEO/013/L5	Data Management, Digital Records and Reporting for Agricultural Machinery Operations	5	50	200
14	AGR/AEO/014/L5	Cost Control, Productivity Monitoring and Operational Improvement	5	50	200
SUBTOTAL (Optional Units)			17	170	610

QUALIFICATION STRUCTURE

This qualification comprises a total of fourteen (14) Mandatory and Optional Units, with a credit value of 17 and 170 Guided Learning Hours (GLH) across the full qualification. One (1) credit is equivalent to ten (10) GLH. Guided Learning Hours are the time a learner spends in the classroom, workshop and laboratory of the Skills Training Centre (STC), being taught, instructed, supervised or assessed by a qualified trainer, facilitator or assessor.

In addition to the GLH, the qualification requires at least twice or thrice the GLH as practice time. Practice time is the time a learner is expected to spend applying the skills of each unit in a real workplace environment, carrying out the same tasks repeatedly until performance becomes consistent, accurate and habitual to the standard the qualification demands. It is undertaken under the guidance of a workplace supervisor, recorded in the learner's logbook and duly endorsed. Practice time is the principal setting where core assessment is conducted. It is through repeated performance in the workplace that a learner's achievement of the Learning Outcomes and Performance Criteria is judged and evidenced. Practice time is an additional requirement to GLH and does not replace them.

To achieve this qualification, the learner must complete all mandatory units, undertake the prescribed practice time, and accumulate the minimum credit value approved by NBTE. Credit is awarded only when a learner has been assessed as competent against all Learning Outcomes and Performance Criteria of a unit.

NOTE: This is a minimum 61-credit unit qualification. To achieve this qualification, learners are required to achieve all mandatory credit units in the level (51 credits) and a minimum of 2 additional units from the optional units in the level. Each Credit is equivalent to 10 Guided Learning Hours (GLH). The Total Learning Hours will therefore consist of the GLH plus the independent learning hours of the Learner, which is generally 50% to 150% of the GLH.

Unit 001: Communication in Agricultural Equipment Operation

Unit reference number: AGR/AEO/001/L5

NSQ Level: 5

Credit value: 3

Guided learning hours: 30

Practice Time: 90 hours

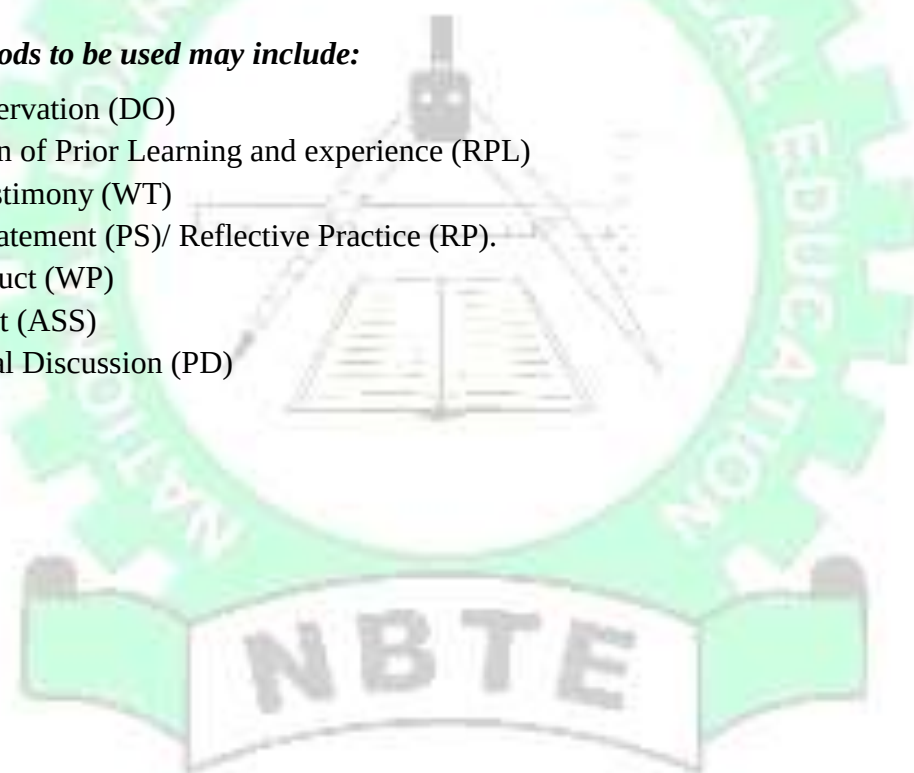
Unit purpose: This unit is designed to equip the learners with knowledge and skills required to strategically manage Agricultural Equipment Operation, ensure profitability, compliance and innovation

Unit assessment requirements/ evidence requirement:

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

Assessment methods to be used may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)
7. Professional Discussion (PD)



Unit 001: Communication in Agricultural Equipment Operation

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type					Evidence Ref. Page No.			
The learner will:		The learner can:									
LO 1: <i>Identify sources of communication and information in Agricultural Equipment work environment</i>	1.1	Use different communication flow system in Agricultural Equipment working environment.									
	1.2	Communicate information to mitigate challenges in Agricultural Equipment working environment.									
	1.3	Document findings in accordance with laid down procedures in Agricultural Equipment working environment.									
LO2: <i>Carryout different methods of communication in Agricultural Equipment working environment</i>	2.1	Communicate messages to workers in Agricultural Equipment working environment.									
	2.2	Monitor achievements in Agricultural Equipment working environment.									
	2.3	Coordinate compliance with all communication accessories used in Agricultural Equipment working environment.									
LO3: <i>Implement strategic communication for Agricultural Equipment Operation</i>	3.1	Enforce Agricultural Equipment handling protocols on team members.									
	3.2	Lead meetings that align supply chain actors with quality standards.									
	3.3	Draft clear reports on losses and corrective actions.									
	3.4	Train staff on communication etiquette for handling durables, perishables and semi perishables produce.									

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQAM Signature (if sampled):

Date:

EQAM Signature (if sampled):

Date:

Unit 002: Teamwork in Agricultural Equipment Operation

Unit Reference Number: AGR/AEO/002/L5

NSQ Level: 5

Credit Value: 3

Guided Learning Hours: 30

Practice Time: 90 hours

Unit purpose: This unit is designed to equip the learners with knowledge and skills required for effective team work and its dynamics within the context of Agricultural Equipment Operation

Unit assessment requirements/ evidence requirement:

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

Assessment methods to be used may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)
7. Professional Discussion (PD)

Unit 002: Teamwork in Agricultural Equipment Operation

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO1: <i>Coordinate team across supply chains in managing Agricultural Equipment Operation system</i>	1.1	Supervise sign in and out of staff Register.		
	1.2	Coordinate the shared use of critical resources to prevent equipment damage.		
	1.3	Create situational awareness in Agricultural Equipment Operation potential hazards.		
LO2: <i>Manage smooth collaboration between different actors in Agricultural Equipment Operation</i>	2.1	Collaborate to monitor the rejection of off-grade produce.		
	2.2	Re-assign roles dynamically within the team during peak working hours.		
	2.3	Maintain sorting line with minimal product loss to team.		
LO3: <i>Develop a technical collaboration in Agricultural Equipment Operation chain</i>	3.1	Share responsibility for checking and recording quality parameters.		
	3.2	Perform team based calibration of grading equipment to ensure all shifts are working with the same technical specifications.		
	3.3	Arrange team members along processing line based on individual experiences and strength.		
LO4 : <i>Coordinate recruitment, training and retraining</i>	4.1	Recruit diverse teams of Agricultural Equipment handlers, technicians and supervisors.		
	4.2	Train diverse teams of Agricultural Equipment handlers, technicians and supervisors.		
	4.3	Develop clear job descriptions, performance metrics		
	4.4	and conduct effective performance evaluation and review.		
	4.5	Foster culture of safety, quality and professional development among team members.		
	4.6	Manage labour effectively during peak harvest seasons, balancing cost with the		

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type		Evidence Ref. Page No.
The learner will:		The learner can:			
		need of speed and care in handling.			

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQAM Signature (if sampled):

Date:

EQAM Signature (if sampled):

Date:



Unit 003: Occupational Health and Safety

Unit Reference Number: AGR/AEO/003/L5

NSQ Level: 5

Credit Value: 3

Guided Learning Hours: 30

Practice Time: 90 hours

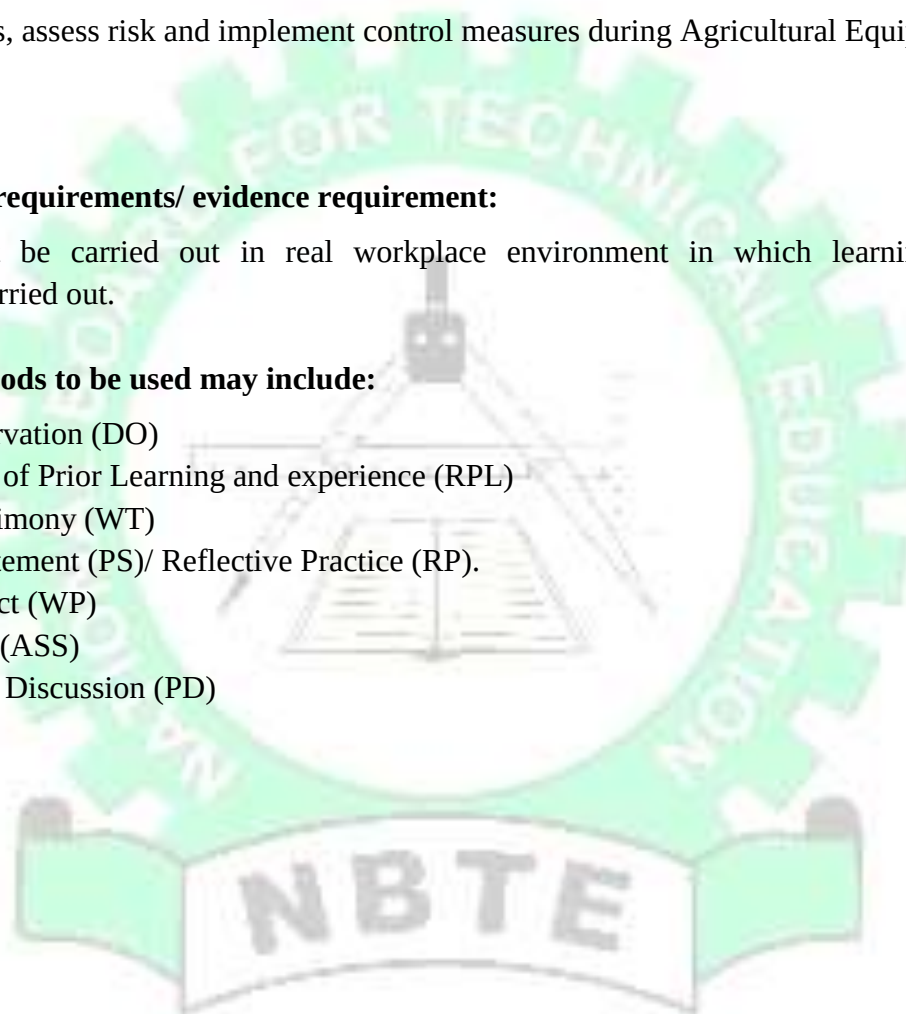
Unit purpose: This unit is designed to equip learners with knowledge and skills required to identify workplace hazards, assess risk and implement control measures during Agricultural Equipment activities.

Unit assessment requirements/ evidence requirement:

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

Assessment methods to be used may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)
7. Professional Discussion (PD)



Unit 003: Occupational Health and Safety

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type					Evidence Ref. Page No.				
The learner will:		The learner can:										
LO1: <i>Develop a strategy on safety first culture and quality metrics</i>	1.1	Apply safety protocols to influence subordinate behaviours (use of PPE)										
	1.2	Facilitate safety communication actions that address specific Agricultural Equipment risk.										
	1.3	Break down Agricultural Equipment tasks to staff for safety and job performance optimization.										
	1.4	Develop modified duty plans for injured workers while recovering.										
LO2: <i>Establish risk management and hazard control</i>	2.1	Identify risks before accidents occur.										
	2.2	Design processing line for routine activities to reduce strain injuries.										
	2.3	Identify risks during non-routine operations such as maintenance shut down or peak Agricultural Equipment season.										
	2.4	Coordinate an effective response to major Agricultural Equipment emergencies.										
LO3: <i>Enforce regulatory compliance and documentation in Agricultural Equipment Operation</i>	3.1	Enforce local and international regulations regarding workers safety in Agricultural Equipment working environment.										
	3.2	Document training records, safety data sheet (SDS), chemicals and incident investigation reports.										
	3.3	Verify that all hazards communications programmes are up-to-date.										
	3.4	Schedule regular inspection of critical safety devices and properly document observations.										

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQAM Signature (if sampled):

Date:

EQAM Signature (if sampled):

Date:

Unit 004: Management of Agricultural Equipment Operations

Unit Reference Number: AGR/AEO/004/L5

Level: 5

Credit Value: 5

Guided Learning Hours: 50

Practice Time: 200 hours

Unit Purpose:

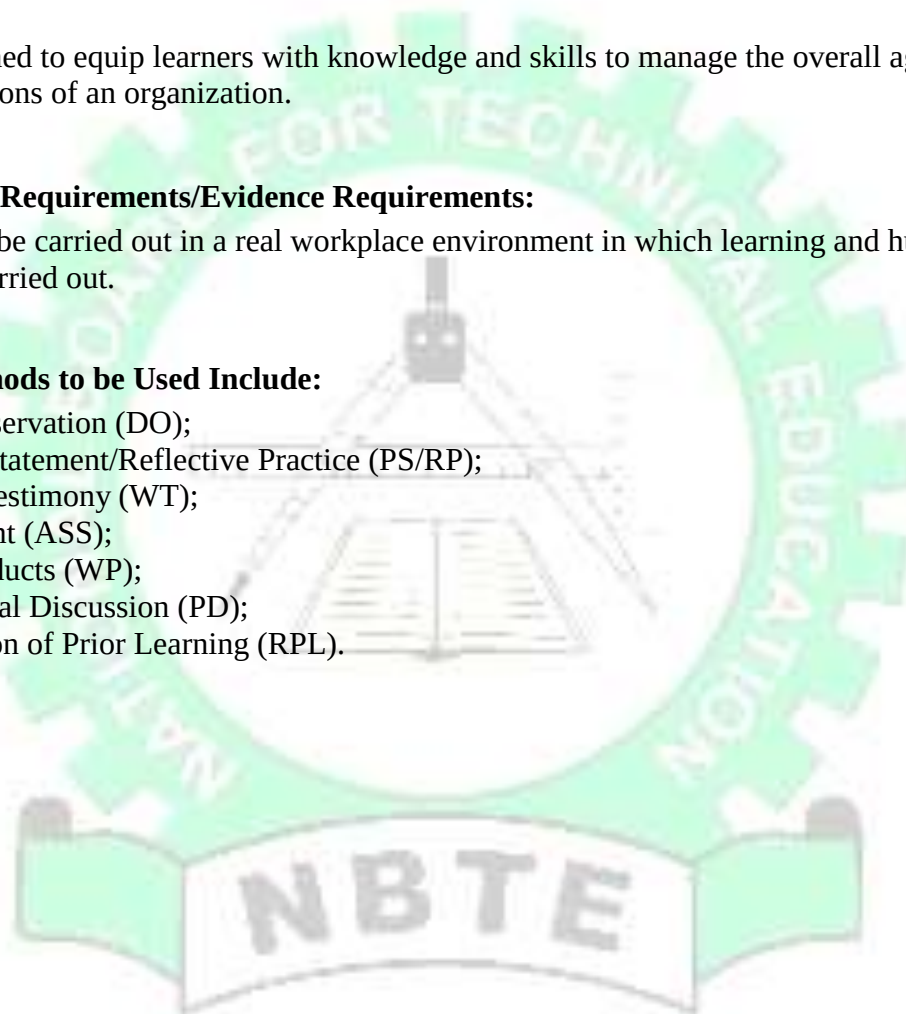
This unit is designed to equip learners with knowledge and skills to manage the overall agricultural equipment operations of an organization.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).



Unit 004: Management of Agricultural Equipment Operations

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. Page No.			
The learner will:		The learner can:								
LO 1: <i>Understand operational objectives for agricultural equipment operations</i>	1.1	Analyse organizational goals relevant to agricultural equipment operations								
	1.2	Determine measurable operational objectives aligned with organizational goals								
	1.3	Communicate operational objectives to relevant personnel								
	1.4	Review and update operational objectives periodically.								
	1.5	Monitor equipment usage in line with overall operation management plans.								
	1.6	Carryout safety standards and protocols associated with equipment operation.								
	1.7	Assess environmental considerations and compliance related to equipment usage.								
	1.8	Manage fuel, labour, and time efficiently during equipment operations.								
	1.9	Communicate operational objectives effectively to team members and stakeholders.								
LO 2: <i>Manage personnel involved in agricultural equipment operations</i>	2.1	Recognize personnel requirements for agricultural equipment operations								
	2.2	Describe the roles and responsibilities to operation personnel								
	2.3	Manage the performance of operation personnel against set objectives								
	2.4	Determine the training and development needs of operation personnel								
	2.5	Supervise personnel engaged in equipment operations.								
	2.6	Provide clear instructions and guidance to staff regarding								

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
		equipment use and safety.		
	2.7	Justify training sessions needs appropriate for training personnel.		
	2.8	Support continuous learning and skill development among team members.		
	2.9	Develop work schedules and assign tasks based on operational priorities.		
	2.10	Maintain clear and open communication with team members regarding tasks and expectations.		
	2.11	Record accurate personnel attendance, training and staff certification		
LO 3: <i>Manage resources for agricultural equipment operations</i>	3.1	Determine human, equipment, material, and financial resource requirements		
	3.2	Monitor utilization of allocated resources		
	3.3	Address resource shortages or constraints affecting operations		
	3.4	Develop plans for resource allocation based on operational needs.		
	3.5	Schedule equipment usage to minimize downtime and prevent conflicts.		
	3.6	Forecast future resource requirements based on operational demands.		
	3.7	Monitor and control costs related to equipment maintenance, fuel, and labor.		
LO 4: <i>Evaluate organizational performance in equipment operations</i>	4.1	Compare agricultural equipment operations against approved performance indicators and work standards.		
	4.2	Compile data on equipment usage, performance, and maintenance activities regularly.		
	4.3	Determine areas where equipment performance falls below expected levels.		

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
	4.4	Analyze the root cause of 4.3		
	4.5	Develop comprehensive reports on equipment performance, highlighting strengths and areas for improvement.		
	4.6	Propose actionable strategies to enhance equipment efficiency, reduce downtime, and optimize operations.		
	4.7	Monitor progress of improvement initiatives and assess their effectiveness over time.		
	4.8	Communicate performance information with management and operational teams to support better decisions		

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQAM Signature (if sampled):

Date:

EQAM Signature (if sampled):

Date:

Unit 005: Development of Equipment Operation Plans and Schedules

Unit Reference Number: AGR/AEO/005/L5

Level: 5

Credit Value: 4

Guided Learning Hours: 40

Practice Time: 190

Unit Purpose:

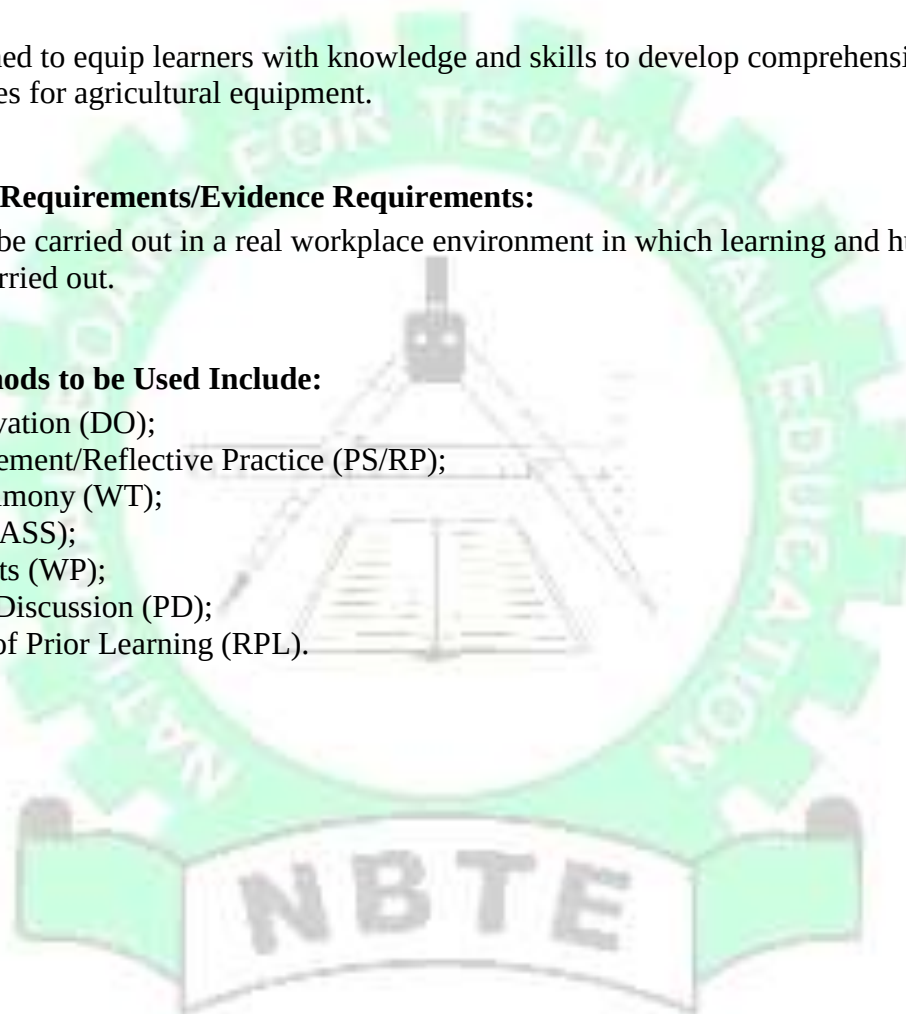
This unit is designed to equip learners with knowledge and skills to develop comprehensive operation plans and schedules for agricultural equipment.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).



Unit 005: Development of Equipment Operation Plans and Schedules

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type					Evidence Ref. Page No.			
The learner will:		The learner can:									
LO 1: <i>Identify factors affecting agricultural equipment operation planning</i>	1.1	Analyse the cropping calendar relevant to planned operations									
	1.2	Assess equipment and personnel availability for the planning period									
	1.3	Recognize constraints likely to affect the operation plan									
	1.4	Examine relevant stakeholders during the planning process									
LO 2: <i>Develop seasonal and annual equipment operation plans</i>	2.1	Determine the scope and objectives of the operation plan									
	2.2	Organise equipment and personnel to plan activities									
	2.3	Determine resource requirements for the operation plan									
	2.4	Compile the seasonal or annual operation plan									
LO 3: <i>Develop detailed operational schedules</i>	3.1	Organise the operation plans into a detailed schedule of activities									
	3.2	Organise activities to optimize equipment utilization									
	3.3	Determine timelines and responsibilities to scheduled activities									
	3.4	Communicate the operational schedule to relevant personnel									
LO 4: <i>Review operation plans and schedules</i>	4.1	Describe implementation of the operation plan and schedule									
	4.2	Monitor deviations from the plan or schedule									
	4.3	Modify the plan or schedule to address identified deviations									
	4.4	Compile changes made to the operation plan and schedule									
LO 5: <i>Determine the number of machines needed to complete operations within a specified</i>	5.1	Obtain the total work requirement (e.g., hectare-hours) for a given operation.									
	5.2	Calculate the work rate of a single machine.									
	5.3	Determine the minimum number									

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
<i>period</i>		of machines required to complete the work within the available time window.		
	5.4	Recommend a fleet size that optimizes cost and timeliness, considering operational risks.		
LO 6: <i>Communicate equipment operation plans effectively to farm personnel and stakeholders</i>	6.1	Present a clear, concise, and well-organized operation plan in writing.		
	6.2	Create visual aids (e.g., maps, charts, schedules) to support the plan's communication.		
	6.3	Explain a plan using appropriate technical language.		
	6.4	Respond to questions and feedbacks about the plan in a professional and constructive manner.		
LO 7: <i>Adapt equipment operation strategies to different agricultural situations and processes</i>	7.1	Modify a standard operation plan to suit a new or different crop, field, or location.		
	7.2	Adjust machinery selection and scheduling in response to changing weather conditions.		
	7.3	Recommend alternative operational strategies when faced with equipment breakdowns or other unexpected events.		
	7.4	Demonstrate flexibility by proposing viable solutions for diverse and challenging agricultural scenarios.		

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQAM Signature (if sampled):

Date:

EQAM Signature (if sampled):

Date:

Unit 006:	Machinery Fleet Coordination and Resource Allocation
Unit Reference Number:	AGR/AEO/006/L5
Level:	5
Credit Value:	5
Guided Learning Hours:	50
Practice Time:	200 hours

Unit Purpose:

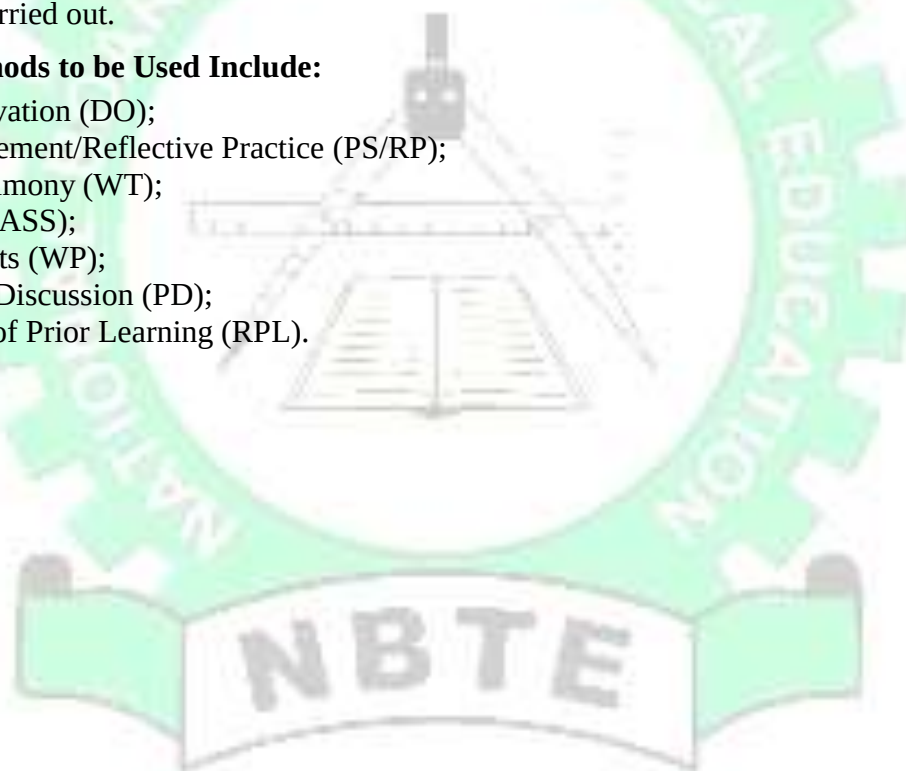
This unit is designed to equip learners with knowledge and skills to coordinate a fleet of agricultural machinery and allocate resources efficiently across operational sites and activities.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).



Unit 006: Machinery Fleet Coordination and Resource Allocation

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Maintain inventory of the machinery fleet</i>	1.1	Carry out an inventory of available machinery and equipment		
	1.2	Compile the operational status of each item of machinery		
	1.3	Supervise the fleet inventory following acquisition, disposal or transfer		
	1.4	Confirm accurate records of fleet inventory		
LO 2: <i>Organise deployment of fleet machinery</i>	2.1	Ensure availability of machinery to operational requirements		
	2.2	Organise the movement of machinery between operational sites		
	2.3	Address conflicting demands for the same machinery		
	2.4	Communicate deployment decisions to relevant personnel		
LO 3: <i>Organise resources across operational sites</i>	3.1	Identify the resource needs of different operational sites		
	3.2	Categorise resource allocation based on organizational objectives		
	3.3	Optimize the allocation of fuel, spare parts and personnel across operational sites.		
	3.4	Monitor the adequacy of resources allocated to each site		
LO 4: <i>Monitor fleet utilization and performance</i>	4.1	Monitor machinery utilization rates across the fleet		
	4.2	Monitor under-utilized or over utilized machinery		
	4.3	Analyze fleet performance data to inform coordination decisions		
	4.4	Determine measures to improve fleet utilization and performance		
LO 5: <i>Minimize downtime</i>	5.1	Coordinate equipment availability during critical farm activities.		
	5.2	Coordinate machinery performance		

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
<i>and repair costs</i>		monitoring to prevent operational delays caused by equipment faults.		
	5.3	Supervise preventive maintenance before major faults occur		
	5.4	Supervise repair works to ensure timely completion		
LO 6:	6.1	Certify machinery is utilized efficiently across all operations.		
<i>Enhance cost-effectiveness</i>	6.2	Monitor operating cost and make sure they are kept within the approved budgets.		
	6.3	Confirm machinery replacement decisions are based on performance and economic analysis		

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQAM Signature (if sampled):

Date:

EQAM Signature (if sampled):

Date:

Unit 007: Quality Assurance and Compliance Monitoring in Agricultural Equipment Operation

Unit Reference Number: AGR/AEO/007/L5

Level: 5

Credit Value: 4

Guided Learning Hours: 40

Practice Time: 190

Unit Purpose:

This unit is designed to equip learners with knowledge and skills to monitor quality assurance and ensure compliance with organizational, regulatory and industry standards in agricultural equipment operations.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).



Unit 007: Quality Assurance and Compliance Monitoring in Agricultural Equipment Operation

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. Page No.			
The learner will:		The learner can:								
LO 1: <i>Interpret quality assurance principles in agricultural equipment operation</i>	1.1	Interpret the concept of quality assurance in agricultural equipment operation								
	1.2	Critically discuss quality standards relevant to agricultural equipment operation								
	1.3	Interpret the benefits of quality assurance to organizational performance								
	1.4	Implement quality assurance procedures to ensure equipment operates within specified parameters.								
	1.5	Manage equipment performance continuously to detect deviations from quality standards.								
	1.6	Use appropriate inspection and testing methods to verify equipment functionality and quality.								
	1.7	Supervise documentation of quality assurance activities.								
	1.8	Communicate quality-related issues effectively to relevant subordinates as appropriate.								
	1.9	Ensure corrective actions promptly, to address quality deficiencies in equipment operation.								
LO 2: <i>Apply quality assurance checklists</i>	2.1	Develop quality assurance checklists for equipment operation activities								
	2.2	Implement checklists during equipment operation and maintenance activities								
	2.3	Compile the outcomes of quality assurance checks								
	2.4	Design clear, concise, and measurable checklist items aligned with quality standards.								
	2.5	Follow established procedures for addressing non-conformities identified through checklists.								
	2.6	Update checklists regularly to reflect								

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
		changes in standards, processes, or products.		
	2.7	Conduct inspections or assessments using the developed checklists accurately and systematically.		
	2.8	Communicate quality assurance findings to relevant personnel.		
LO 3: <i>Monitor compliance with regulatory and industry standards</i>	3.1	Carry out compliance checks against regulatory and industry standards		
	3.2	Supervise compliance monitoring records		
	3.3	Communicate compliance status to the appropriate authority		
	3.4	Demonstrate knowledge of relevant regulatory and industry standards applicable to the organization		
	3.5	Conduct routine inspections and audits to ensure compliance with standards.		
	3.6	Maintain accurate records of compliance status, inspections, and corrective actions.		
	3.7	Assist in developing and implementing corrective measures to address non-compliance.		
	3.8	Promote awareness of compliance requirements among team members through training.		
	3.9	Confirm that corrective actions have been effectively implemented and maintained.		
LO 4: <i>Manage non-conformance and corrective action</i>	4.1	Investigate the root cause of identified non-conformance		
	4.2	Investigate the root cause of non-conformance.		
	4.3	Develop a corrective action plan to address non-conformance		
	4.4	Maintain detailed records of non-conformance instances, including nature, location, and impact.		
	4.5	Communicate non-conformance findings to relevant stakeholders in a		

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
		timely manner.		
	4.6	Implement and monitor corrective actions		
	4.7	Examine the effectiveness of corrective actions taken		
	4.8	Determine opportunities for process improvement to prevent future non-conformance.		
	4.9	Update procedures and training as necessary to reinforce best practices.		

Learner's Signature:

Date:

Assessor's Signature:

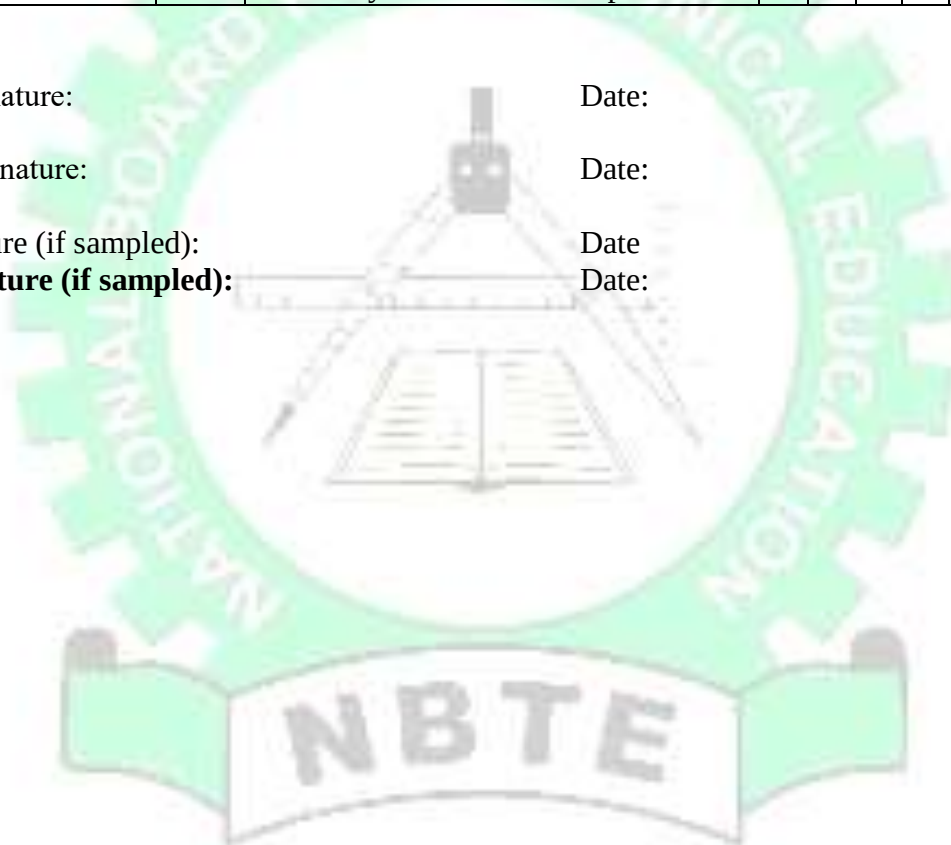
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EQAM Signature (if sampled):

Date:



Unit 008: Advanced Diagnostics and Fault Management

Unit Reference Number: AGR/AEO/008/L5

Level: 5

Credit Value: 5

Guided Learning Hours: 50

Practice Time: 200 hours

Unit Purpose:

This unit is designed to equip learners with knowledge and skills to carry out advanced diagnostics of agricultural machinery faults and manage the fault resolution process across the equipment fleet.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).



Unit 008: Advanced Diagnostics and Fault Management

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. Page No.			
The learner will:		The learner can:								
LO 1: <i>Demonstrate the use of advanced diagnostic techniques for agricultural machinery</i>	1.1	Explain principles of advance diagnostic systems used in agricultural machinery								
	1.2	Demonstrate the use of advanced diagnostic tools relevant to agricultural machinery.								
	1.3	Use diagnostic software and electronic testing devices effectively.								
	1.4	Interpret diagnostic codes and fault indicators for machinery systems								
	1.5	Analyse fault patterns across related systems to determine the provable causes of machinery faults								
	1.6	Interpret engine, hydraulic and electrical system fault indicators								
	1.7	Document diagnostic findings in accordance with workplace procedures								
LO 2: <i>Apply Advance Diagnostic procedure using specialized diagnostic tool</i>	2.1	Select appropriate diagnostic tools and equipment for machinery testing								
	2.2	Prepare agricultural machinery for diagnostic procedure.								
	2.3	Apply appropriate diagnostic procedures to identify machinery faults and issues.								
	2.4	Confirm abnormal readings or patterns indicating potential faults or inefficiencies in 2.2 above.								
	2.5	Verify the accuracy of diagnostic result.								
LO 3: <i>Manage the fault reporting and resolution process</i>	3.1	Design a fault reporting template for the equipment fleet								
	3.2	Perform corrective maintenance in accordance with manufacturers specification								
	3.3	Test machinery after maintenance to confirm serviceability								

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
	3.4	Recommend preventive maintenance measures to minimize future equipment failures.		
	3.5	Coordinate with maintenance, technical teams, or suppliers to resolve faults.		
	3.6	Facilitate timely and effective troubleshooting and repairs.		
	3.7	Conduct follow-up inspections or tests to verify resolution effectiveness.		

Learner's Signature:

Date:

Assessor's Signature:

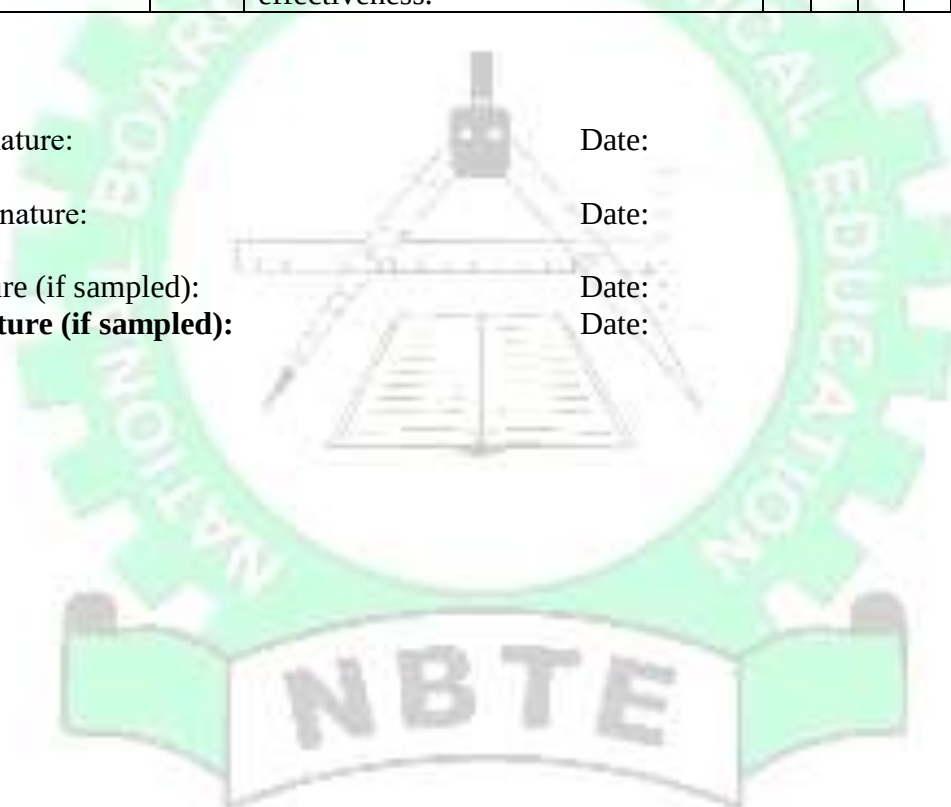
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IQAM Signature (if sampled):

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EQAM Signature (if sampled):

Date:



Unit 009: Maintenance Planning and Workshop Coordination

Unit Reference Number: AGR/AEO/009/L5

Level: 5

Credit Value: 4

Guided Learning Hours: 40

Practice Time: 190 hours

Unit Purpose:

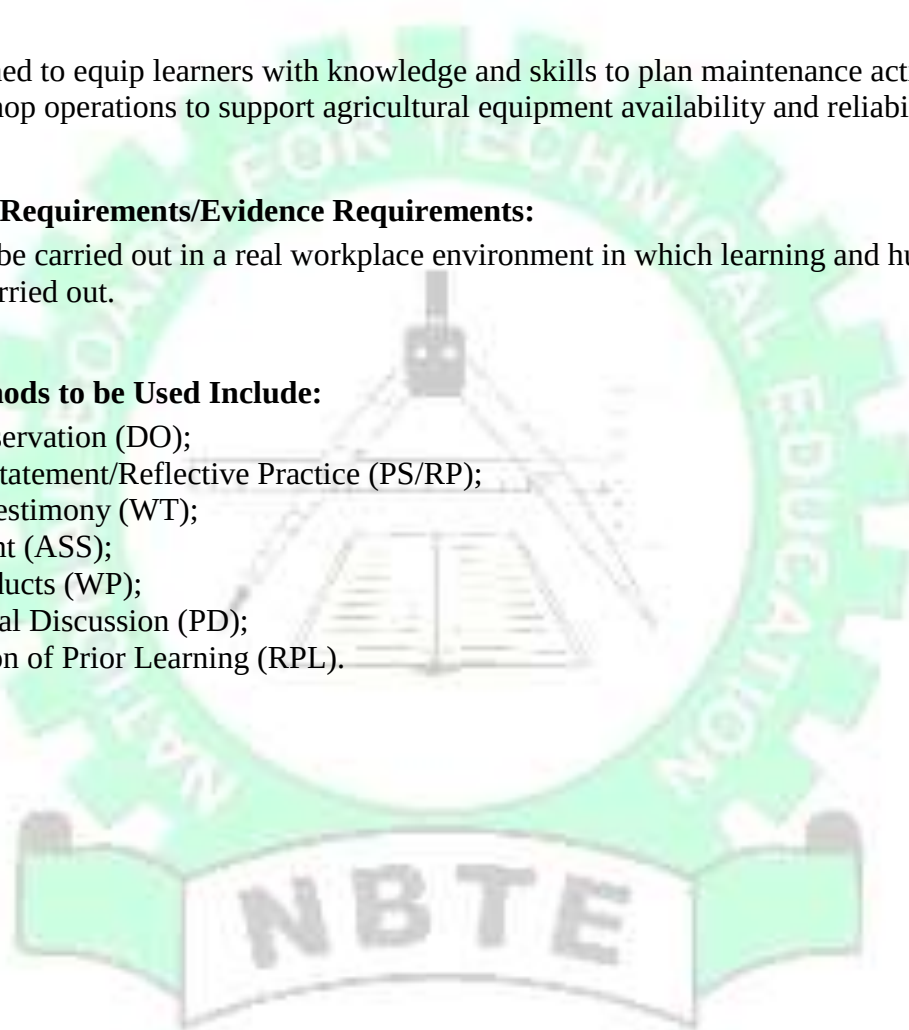
This unit is designed to equip learners with knowledge and skills to plan maintenance activities and coordinate workshop operations to support agricultural equipment availability and reliability.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).



Unit 009: Maintenance Planning and Workshop Coordination

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. Page No.			
The learner will:		The learner can:								
LO 1: <i>Develop a fleet maintenance plan</i>	1.1	Analyse the maintenance history and requirements of the equipment fleet								
	1.2	Develop a maintenance plan covering preventive and corrective maintenance								
	1.3	Plan maintenance activities to minimize disruption to operations								
	1.4	Communicate the maintenance plan to workshop and operation personnel								
LO 2: <i>Organise workshop resources and personnel</i>	2.1	Organise workshop personnel to scheduled maintenance tasks								
	2.2	Review the use of workshop tools, equipment and facilities.								
	2.3	Monitor progress of maintenance tasks in the workshop								
	2.4	Address resource conflicts within the workshop								
LO 3: <i>Manage spare parts and maintenance inventory</i>	3.1	Determine spare parts requirements based on the maintenance plan								
	3.2	Maintain an inventory of spare parts and consumables								
	3.3	Initiate procurement of spare parts in line with organizational procedure								
	3.4	Monitor stock levels to avoid shortages or overstocking								
LO 4: <i>Monitor maintenance performance and equipment availability</i>	4.1	Observe equipment downtime arising from maintenance activities								
	4.2	Monitor adherence to the maintenance schedule								
	4.3	Evaluate maintenance performance data, including average time to repair								
	4.4	Determine measures to improve maintenance performance and equipment availability								
LO 5:	5.1	Describe the role of the maintenance planner.								

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
<i>Assign roles and responsibilities within a maintenance planning and coordination system</i>	5.2	Evaluate how roles interact within the maintenance workflow		
	5.3	Assign roles and responsibilities for the scheduler, coordinator, workshop supervisor and technician.		
LO 6: <i>Prepare maintenance plans appropriate for operating conditions and equipment types</i>	6.1	Develop maintenance plans based on manufacturer recommendations.		
	6.2	Adapt maintenance plans to specific operating conditions and equipment types.		
	6.3	Present maintenance plans in a clear and organized format		
LO 7: <i>Organize work orders and set maintenance priorities effectively</i>	7.1	Organize work orders for efficient execution.		
	7.2	Apply risk-based maintenance principles to prioritize work.		
	7.3	Assign work orders using a priority matrix.		
	7.4	Manage work order backlog and track progress.		
LO 8: <i>Plan workshop operations from job scoping to completion</i>	8.1	Coordinate workshop operations from dismantling to testing and commissioning e.g., tractor implements.		
	8.2	Coordinate interventions on equipment within the workshop.		
	8.3	Manage the workstation and workflow.		
	8.4	Evaluate quality control of work performed		

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQAM Signature (if sampled):

Date:

EQAM Signature (if sampled):

Date:

Unit 010: Risk Management and Environmental Sustainability in Mechanized Agriculture

Unit Reference Number: AGR/AEO/010/L5

Level: 5

Credit Value: 4

Guided Learning Hours: 40

Practice Time: 190 hours

Unit Purpose:

This unit is designed to equip learners with knowledge and skills to manage operational, safety and environmental risk and to promote environmental sustainability.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).

Unit 010: Risk Management and Environmental Sustainability in Mechanized Agriculture

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. Page No.			
The learner will:		The learner can:								
LO 1: <i>Assess risks in mechanized agricultural operations</i>	1.1	Inspect operational, safety and environmental risks in mechanized agriculture								
	1.2	Discuss the likelihood and impact of identified risks								
	1.3	Distinguish potential risks associated with machinery, tools, and equipment.								
	1.4	Categorize risks based on their potential impact.								
	1.5	Determine gaps or areas needing improvement.								
	1.6	Determine operator skill levels and training adequacy.								
	1.7	Confirm equipment malfunctions or defects that pose risks.								
	1.8	Estimate potential human errors or fatigue that could increase risks.								
	1.9	Record identified hazards, analysis results, and risk levels.								
	1.10	Propose training or procedural modifications.								
	1.11	Carry out risk assessments update based on changes in equipment, environment, or procedures.								
LO 2: <i>Develop risk management and mitigation measures</i>	2.1	Determine potential risks and hazards relevant to the specific context or project.								
	2.2	Develop effective risk mitigation strategies to reduce or eliminate identified risks.								
	2.3	Implement risk management measures in accordance with organizational policies and procedures.								
	2.4	Develop contingency plans for high-impact risks								
	2.5	Communicate risk management plans and mitigation measures clearly to relevant stakeholders.								

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
	2.6	Monitor and review risk management measures regularly to ensure their effectiveness.		
	2.7	Adjust risk management strategies promptly in response to changing conditions or new information.		
	2.8	Certify compliance with legal, safety, and environmental regulations related to risk management.		
LO 3: <i>Promote environmental sustainability in equipment operations</i>	3.1	Adhere to environmental regulations and standards during equipment use.		
	3.2	Implement energy-efficient practices to reduce fuel and electricity consumption.		
	3.3	Use equipment in a manner that minimizes emissions and pollutants.		
	3.4	Promote proper disposal and management of operational waste		
	3.5	Perform regular maintenance to ensure optimal equipment efficiency and reduce environmental impact.		
	3.6	Dispose of recycled waste and materials generated during operations.		
	3.7	Adopt innovative technologies that enhance environmental sustainability.		
	3.8	Report environmental issues or breaches promptly and implement corrective measures.		
LO 4: <i>Review risk management measures</i>	4.1	Monitor the implementation of risk mitigation measures		
	4.2	Conduct scheduled inspections, review and update risk management measures.		
	4.3	Evaluate the effectiveness of risk management measures		
	4.4	Certify risk management measures comply with organizational policies, standards, and legal requirements.		
	4.5	Prepare comprehensive reports for		

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
		stakeholders, highlighting risk status and control effectiveness.		
	4.6	Recommend modifications or improvements based on review outcomes.		
	4.7	Communicate monitoring results and review outcomes to relevant stakeholders.		
	4.8	Use review findings to refine and enhance risk management processes.		

Learner's Signature:

Date:

Assessor's Signature:

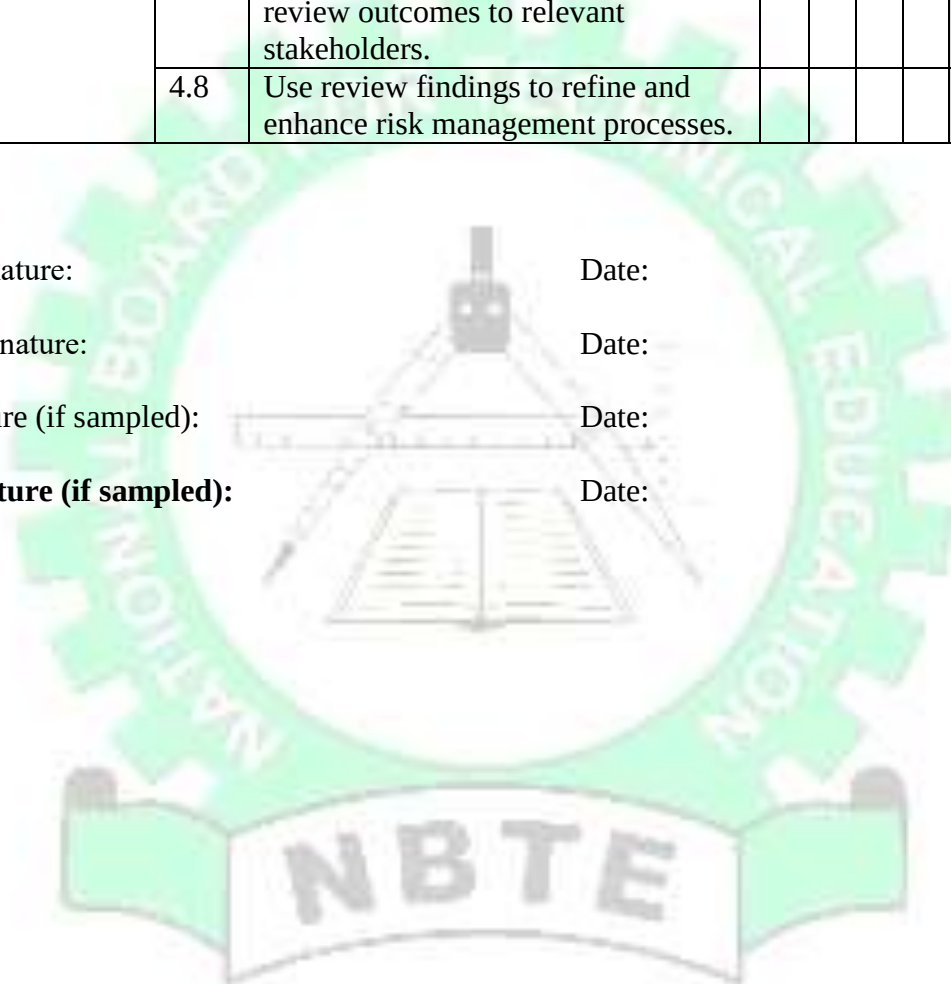
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EQAM Signature (if sampled):

Date:



Unit 011: Leadership, Supervision and Coordination of Agricultural Equipment Operation Personnel

Unit Reference Number: AGR/AEO/011/L5

Level: 5

Credit Value: 4

Guided Learning Hours: 40

Practice Time: 190 hours

Unit Purpose:

This unit is designed to equip learners with knowledge and skills to provide leadership, supervision, and coordination to agricultural equipment operation personnel across the organization.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).

Unit 011: Leadership, Supervision and Coordination of Agricultural Equipment Operation Personnel

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Provide leadership to agricultural equipment operation personnel</i>	1.1	Demonstrate organizational values and ethical standards in carrying out duties		
	1.2	Communicate organizational vision and operational priorities to personnel		
	1.3	Promote commitment to organizational goals among operation personnel		
	1.4	Support professional growth of operation personnel		
LO 2: <i>Supervise the performance of operation personnel</i>	2.1	Determine performance expectations for operation personnel		
	2.2	Monitor and evaluate the performance of operation personnel		
	2.3	Provide constructive feedback on performance		
	2.4	Address underperformance through appropriate supervisory action		
LO 3: <i>Organise activities across operation teams</i>	3.1	Organise the activities of multiple operation teams to achieve organizational objectives		
	3.2	Guide information sharing across operation teams		
	3.3	Address coordination challenges between teams		
	3.4	Monitor overall coordination effectiveness across teams		
LO 4: <i>Manage organizational change within operation teams</i>	4.1	Assess the need for change within agricultural equipment operations		
	4.2	Communicate planned changes to appropriate operation personnel		
	4.3	Manage resistance to change within operation teams		
	4.4	Monitor the implementation and impact of organizational change		
LO 5:	5.1	Communicate organizational changes affecting equipment operations to relevant personnel.		

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
Manage organizational change and resolve workplace challenges.	5.2	Implement change management strategies that promote staff acceptance and participation.		
	5.3	Resolve workplace disputes using organizational procedures and effective communication techniques.		
	5.4	Evaluate the effectiveness of implemented changes and recommend improvements measures.		
LO 6: Monitor operational performance and manage reporting systems.	6.1	Analyze operational data to assess productivity, equipment utilization and workforce performance.		
	6.2	Prepare operational reports in accordance with organizational requirements.		
	6.3	Present operational findings and recommendations to management and relevant stakeholders.		
	6.4	Maintain operational records to support planning, decision-making and continuous improvement		

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQAM Signature (if sampled):

Date:

EQAM Signature (if sampled):

Date:

Unit 012: Training, Mentoring and Assessment Support for Lower-Level Operators

Unit Reference Number: **AGR/AEO/012/L5**

Level: 5

Credit Value: 4

Guided Learning Hours: 40

Practice Time: 190 hours

Unit Purpose:

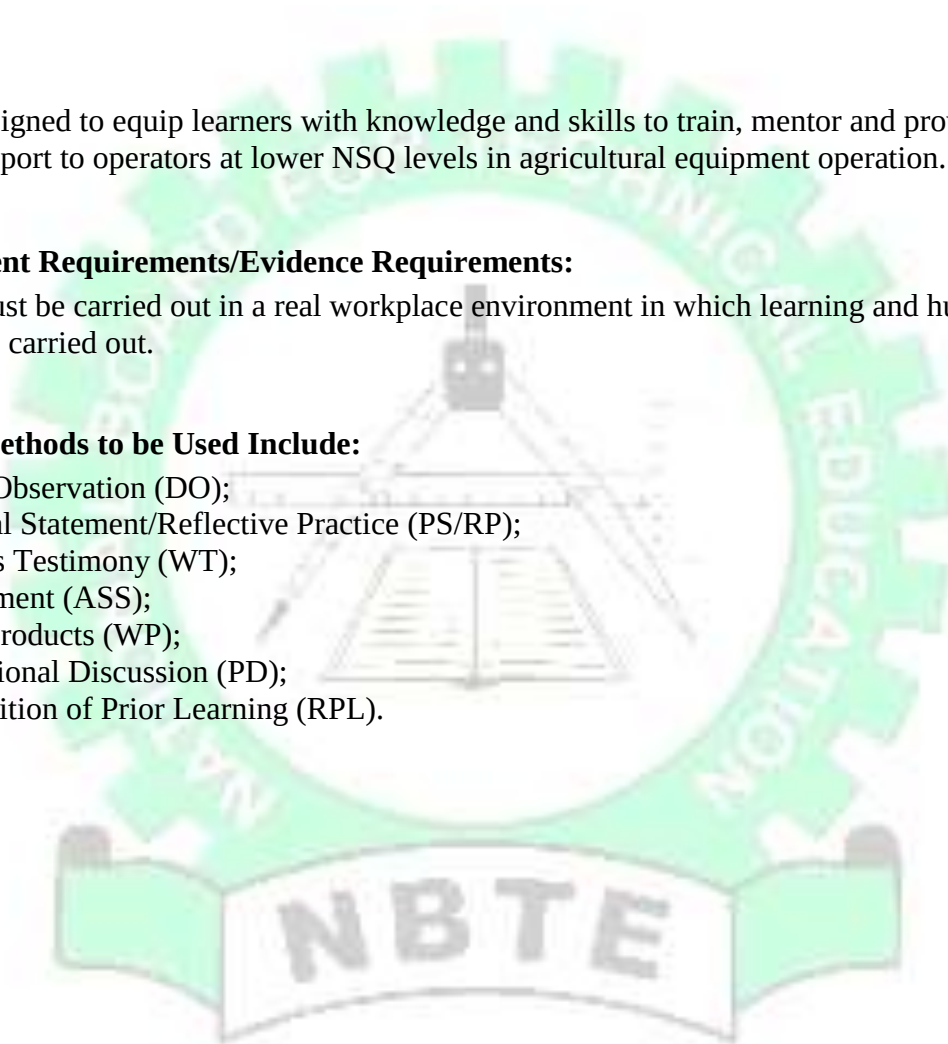
This unit is designed to equip learners with knowledge and skills to train, mentor and provide assessment support to operators at lower NSQ levels in agricultural equipment operation.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).



Unit 012: Training, Mentoring and Assessment Support for Lower-Level Operators

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Critically evaluate the training needs of lower-level operators</i>	1.1	Assess the competence level of lower-level operators		
	1.2	Identify gaps between required and current competence		
	1.3	Categorize identified training needs		
	1.4	Compile identified training needs		
LO 2: <i>Deliver on-the-job training to lower-level operators</i>	2.1	Plan on-the-job training sessions to address identified needs		
	2.2	Demonstrate correct operating procedures to learners		
	2.3	Provide guided practice opportunities to learners		
	2.4	Evaluate learner progress following training sessions		
LO 3: <i>Provide mentoring support to lower-level operators</i>	3.1	Initiate a mentoring relationship with lower-level operators		
	3.2	Provide guidance and encouragement to mentees		
	3.3	Address challenges raised by mentees in carrying out their duties		
	3.4	Monitor the progress and development of mentees over time		
LO 4: <i>Support the assessment process for lower-level operators</i>	4.1	Support the assessor in gathering evidence of learner competence		
	4.2	Provide witness testimony to support learner assessment		
	4.3	Provide feedback to learners on assessment outcomes		
	4.4	Maintain records of training and mentoring support provided		
LO 5: <i>Develop training support materials such as checklists, job aids, and standard operating procedure guides.</i>	5.1	Design assessment tools that directly match competency standards and performance criteria.		
	5.2	Create practical assessment scenarios that reflect real operational conditions.		
	5.3	Assess tools used for critical safety checks that constitute "must-pass" items.		

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
	5.4	Test the validity of the tool by piloting it with a known competent operator.		
	5.5	Apply the tool consistently and objectively across all candidates.		
LO 6:	6.1	Deliver feedback promptly after the observed performance.		
<i>Provide constructive, specific, and balanced feedback to improve operator performance</i>	6.2	Provide specific examples of what was done well and what needs improvement (not vague generalizations).		
	6.3	Provide positive reinforcement with corrective suggestions (e.g., "feedback sandwich" or equivalent).		
	6.4	Deliver difficult feedback professionally and privately, maintaining the operator's dignity.		

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQAM Signature (if sampled):

Date:

EQAM Signature (if sampled):

Date:

Unit 013: **Data Management, Digital Records and Reporting for Agricultural Machinery Operations**

Unit Reference Number: AGR/AEO/013/L5

Level: 5

Credit Value: 4

Guided Learning Hours: 40

Practice Time: 190 hours

Unit Purpose:

This unit is designed to equip learners with knowledge and skills to manage data, maintain digital records and prepare reports for agricultural machinery operations using appropriate digital tools.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).

Unit 013: Data Management, Digital Records and Reporting for Agricultural Machinery Operations

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: <i>Interpret digital data management in agricultural equipment operations</i>	1.1	Analyse operational data generated in agricultural equipment operations.		
	1.2	Evaluate digital tools and systems used for data management.		
	1.3	Assess the benefits of digital data management over manual record systems.		
	1.4	Apply organizational data management policies to operational activities.		
LO 2: <i>Maintain digital records of equipment operations</i>	2.1	Record equipment usage and maintenance data into digital systems		
	2.2	Maintain digital records promptly following operational activities		
	2.3	Examine the accuracy of data entered into digital systems		
	2.4	Administer digital records for ease of retrieval		
LO 3: <i>Use digital tools for operational reporting</i>	3.1	Compile operational reports using digital tools		
	3.2	Modify reports to meet management information needs		
	3.3	Deliver digital reports to relevant stakeholders		
	3.4	Interpret digital reports to support operational decision-making		
LO 4: <i>Maintain data integrity and security</i>	4.1	Implement data backup procedures to digital records		
	4.2	Supervise access to sensitive operational data		
	4.3	Investigate and report data discrepancies or anomalies.		
	4.4	Maintain compliance with organizational data protection policy		

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQAM Signature (if sampled):

Date:

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		

EQAM Signature (if sampled):

Date:



Unit 014: Cost Control, Productivity Monitoring and Operational Improvement

Unit Reference Number: AGR/AEO/014/L5

Level: 5

Credit Value: 4

Guided Learning Hours: 40

Practice Time: 190 hours

Unit Purpose:

This unit is designed to equip learners with knowledge and skills to control operational costs, monitor productivity and drive continuous improvement in agricultural equipment operations.

Unit Assessment Requirements/Evidence Requirements:

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

Assessment Methods to be Used Include:

1. Direct Observation (DO);
2. Personal Statement/Reflective Practice (PS/RP);
3. Witness Testimony (WT);
4. Assignment (ASS);
5. Work Products (WP);
6. Professional Discussion (PD);
7. Recognition of Prior Learning (RPL).

Unit 014: Cost Control, Productivity Monitoring and Operational Improvement

LEARNING OUTCOME (LO) The learner will:		PERFORMANCE CRITERIA (PC) The learner can:	Evidence Type	Evidence Ref. Page No.
LO 1: <i>Monitor the operational costs of agricultural equipment</i>	1.1	Analyze cost components of agricultural equipment operations.		
	1.2	Monitor fuel, maintenance, and labour costs against budget		
	1.3	Evaluate causes of cost overruns		
	1.4	Implement measures to control operational costs		
LO 2: <i>Monitor the productivity of agricultural equipment operations</i>	2.1	Establish productivity indicators for agricultural equipment operations		
	2.2	Compile data on equipment output and operating hours		
	2.3	Analyse productivity data against established targets		
	2.4	Communicate productivity performance to the appropriate authority		
LO 3: <i>Recognise opportunities for operational improvement</i>	3.1	Analyse cost and productivity data to identify improvement opportunities		
	3.2	Compare operational performance against industry standards		
	3.3	Examine personnel for suggestions on operational improvement		
	3.4	Categorize identified improvement opportunities		
LO 4: <i>Implement improvement initiatives</i>	4.1	Develop an implementation plan for prioritized improvement initiatives		
	4.2	Implement improvement initiatives within agricultural equipment operations		
	4.3	Monitor the impact of improvement initiatives on cost and productivity		
	4.4	Compile outcomes of improvement initiatives for future reference		
LO 5: <i>Improve operational</i>	5.1	Verify operations are completed according to planned schedules.		
	5.2	Streamline work processes to reduce delays and eliminate unnecessary		

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA (PC)	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
<i>efficiency</i>		activities.		
	5.3	Evaluate the efficient use of resources, including fuel and materials.		
	5.4	Coordinate interdepartmental activities to ensure smooth workflow and timely completion of operations.		
	5.5	Monitor compliance with standard operating procedures to maintain efficiency and quality.		
LO 6: <i>Enhance profitability</i>	6.1	Evaluate operating cost controls through efficient resource management.		
	6.2	Find out resource-generating activities to maximize returns.		
	6.3	Monitor production targets to maintain product quality.		
	6.4	Implement measures to minimize waste and operational losses.		
	6.5	Monitor equipment downtime to support timely maintenance and repairs.		

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQAM Signature (if sampled):

Date:

EQAM Signature (if sampled):

Date:

LIST OF MINIMUM FACILITIES AND EQUIPMENT

A. GENERAL WORKSHOP TOOLS

S/N	ITEM	QUANTITY REQUIRED
1.	Spanner/Wrench Set	
2.	Socket Set	
3.	Screwdrivers	
4.	Pliers	
5.	Hammer and Mallet	
6.	Allen Keys	
7.	Grease Gun	
8.	Oil Can	
9.	Funnel	
10.	Jack	
11.	Jack Stands	
12.	Chain Block/Lifting Device	
13.	Bench Vice	
14.	Portable Workbench	
15.	Tool Box/Cabinet	
16.	Hacksaw	
17.	Files	
18.	Torque Wrench	
19.	Tyre Pressure Gauge	
20.	Measuring Tape	
21.	Vernier Caliper	
22.	Feeler Gauge	
23.	Safety boots	
24.	Coveralls/Overalls	
25.	Hand gloves	
26.	Safety helmet	
27.	Eye goggles	
28.	Face shield	
29.	Ear protection	
30.	Respirator/Nose mask	
31.	Reflective jacket	
32.	Raincoat/Field protective clothing	
33.	First aid kit	
34.	Fire extinguisher	
35.	Fire blanket	
36.	Spill control kit	
37.	Oil spill absorbent materials	
38.	Safety cones	
39.	Warning signs	
40.	Warning tapes/Barricades	

41.	Lock-out/Tag-out devices	
42.	Emergency stop devices	
43.	Emergency contact chart	
44.	Multimeter	
45.	Battery Tester	
46.	Battery Charger	
47.	Test Lamp	
48.	Compression Tester	
49.	Hydraulic Pressure Test Kit	
50.	Pressure Gauge	
51.	Fuel Pressure Gauge	
52.	Tachometer	
53.	Infrared Thermometer	
54.	Diagnostic Scanner	
55.	Electrical Circuit Tester	

B. FARM MACHINERY

S/N	ITEM	QUANTITY REQUIRED
1.	Farm Tractor	
2.	Disc Plough	
3.	Mouldboard Plough	
4.	Harrow	
5.	Ridger	
6.	Planter	
7.	Seeder	
8.	Boom Sprayer	
9.	Fertilizer Spreader	
10.	Trailer	
11.	Rotavator	
12.	Mower	
13.	Baler	
14.	PTO Shaft with Guard	
15.	Water Pump	
16.	Suction Hose	

17.	Delivery Hose	
18.	Sprinkler System	
19.	Drip Irrigation Lines	
20.	Emitters	
21.	Valves	
22.	Filters	
23.	Water Storage Tank	
24.	Fertigation Tank	
25.	Flow Meter	
26.	Soil Moisture Meter	
27.	Thresher	
28.	Sheller	
29.	Decorticator	
30.	Grain Cleaner	
31.	Dryer	
32.	Hydraulic Presser	
33.	Milling Machine	
34.	Grader	
35.	Moisture Meter	
36.	Sealing Machine	
37.	Weighing Scale	
38.	Thresher	

C. LIVESTOCK MECHANIZATION

S/N	ITEM	QUANTITY REQUIRED
1.	Feed Mixer	
2.	Feed Grinder	
3.	Automated Feeder	
4.	Watering System	
5.	Milking Machine	

6.	Manure Scraper	
7.	Wheelbarrow	
8.	Shovel	
9.	Forage Chopper	
10.	Animal Handling Equipment	

D. ICT STUDIO

S/N	ITEM	QUANTITY REQUIRED
1.	Computer/Laptop	
2.	Printer	
3.	Scanner	
4.	Mobile Phone/Two-way Radio	
5.	GPS Device	
6.	Projector	
7.	Tablet	
8.	Spreadsheet Software	
9.	Database/Fleet Management Software	
10.	Cloud Backup Storage	

E. DEMONSTRATION FACILITIES

S/N	ITEM	QUANTITY REQUIRED
1.	Demonstration Farm	
2.	Workshop/Maintenance Bay	
3.	Tool Store	
4.	Fuel Storage Area	
5.	Irrigation Area	
6.	Post-Harvest Area	
7.	Livestock Mechanization Area	
8.	Classroom	
9.	Computer/Records Office	
10.	Waste Disposal Area	

LIST OF PARTICIPANTS DURING THE NSQ/NOS ZERO DRAFT WORKSHOP FOR AGRICULTURAL EQUIPMENT OPERATION LEVELS 4 & 5

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