

FEDERAL MINISTRY OF EDUCATION

National Skills Qualifications FOR

AGRICULTURAL EQUIPMENT OPERATION



February, 2025



Innovation Development and Effectiveness in the Acquisition of Skills (IDEAS) Project

Funded by IDEAS project

National Board for Technical Education

Plot B, Bida Road, P.M.B. 2239, Kaduna, Nigeria



NATIONAL SKILLS QUALIFICATION

AGRICULTURAL EQUIPMENT OPERATION

LEVEL 1-3

FEBRUARY, 2025

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| Unit title | Provides a clear explanation of the content of the unit. |
|-----------------------------|--|
| Unit number | The unique number assigned to the unit. |
| Unit reference | The unique reference number given to each unit at qualification approval by NBTE |
| Unit level | Denotes the level of the unit within the National Vocational Qualification framework NVQF. |
| Unit credit value | The value that has been given to the unit based on the expected learning time for an average learner. 1 credit = 10 learning hours |
| Unit aim | Provides a brief outline of the unit content. |
| Learning outcome | A statement of what a learner will know, understand or be able to do, as a result of a process of learning. |
| Assessment criteria | A description of the requirements a learner must achieve to demonstrate that a learning outcome has been met. |
| Unit assessment guidance | Any additional guidance provided to support the assessment of the unit. |
| Unit guided | The average number of hours of supervised or directed study time or |
| learning hours | assessment required to achieve a qualification or unit of a qualification. |

GUIDE

NATIONAL OCCUPATIONAL STANDARDS

This program is designed for three levels of professional Agricultural Equipment Operators:

- 1) Level I Agricultural Equipment Operations
- 2) Level II Agricultural Equipment Operations
- **3)** Level III Agricultural Equipment Operations

NATIONAL SKILLS QUALIFICATION

AGRICULTURAL EQUIPMENT OPERATION

LEVEL 1

FEBRUARY, 2025

NATIONAL SKILLS QUALIFICATION AGRICULTURAL EQUIPMENT OPERATIONS LEVEL 1

GENERAL INFORMATION

OVERVIEW

This qualification aims to equip learners with knowledge and skills in Communicating effectively, working in a team, complying with health and safety requirements, Operations of Agricultural Equipment, management of storage facilities and waste generated on the farm. The learner shall be supervised by higher officer such as Farm Manager or Supervisor. The learner is expected to assist and carry out tasks that are not of decision-making nature on the field or farm. This qualification is subject to review as at when the need arises

QUALIFICATION PURPOSE

This qualification is designed to equip learner with knowledge and skills on Agricultural Equipment Operation.

QUALIFICATION REQUIREMENTS

All Learners must:

- a. Be at least (12) years of age
- b. Be medically fit
- c. Be physically fit
- d. Be mentally fit (Mental alertness)
- e. Have achieved all the Safety and Health mandatory units in the qualification
- f. Be a Nigerian citizen
- g. Other nationals (International passport, residence permit)
- h. Be vetted

QUALIFICATION OBJECTIVE

At the end of the qualification, the learner should be able to:

- a. Communicate effectively in workplace
- b. Work in a team
- c. Comply with health and safety requirement
- d. Carry out farm work with hand tools and implements.
- e. Operate Animal Draught tools and implements.
- f. Operate Power Tiller implement and equipment
- g. Operate some basic Tractor operations
- h. Operate threshing, shelling and decorticating equipment

UNIT ASSESSMENT/EVIDENCE REQUIREMENTS:

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

development is carried out. Simulation is allowed in this unit and level.

Assessment Methods to be Used Include:

- 1. Direct Observation/Oral Q&A (DO)
- 2. Question and Answer (QA)
- 3. Witness Testimony (WT)
- 4. Personal statement (PS)
- 5. Examine work product

(This depends on the Trade Areas to be assessed)

| | | - | | | |
|-------|-------------------------|--|--------------|---------------|--|
| S/No | Reference Number | NOS Title | Credit Value | | |
| | | | Guided Le | earning Hours | |
| 1 | AGR/AEO/L1/01 | Use of Farm Hand tools and | 1 | 10 | |
| | | Equipment | | | |
| 2 | AGR/AEO/L1/02 | Occupational Health and Safety | 2 | 20 | |
| 3 | AGR/AEO/L1/03 | Communication and Interpersonal Skills | 2 | 20 | |
| 4 | AGR/AEO/L1/04 | Team Work | 1 | 10 | |
| 5 | AGR/AEO/L1/05 | Use of Animal Draught tools and implements | 2 | 20 | |
| SUBT | DTAL | | 8 | 80 | |
| | | Optional Units | | | |
| 6 | AGR/AEO/L1/06 | Operation of Power Tiller Implement and Equipment | 3 | 30 | |
| 7 | AGR/AEO/L1/07 | Operations of Farm tractor, Implement and Equipment | 5 | 50 | |
| 8 | AGR/AEO/L1/08 | Operation of Threshing, shelling and decorticating Equipment | 4 | 40 | |
| SUBT | DTAL | 1 | 12 | 120 | |
| TOTAL | | | 20 | 200 | |

Mandatory Units

NOTE: This is a 28-credit unit qualification. To achieve this qualification; Learners are required to achieve all mandatory credits units in the level and three (3) 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% – 150% of the GLH. The actual Total Learning Hours for each Credit will then be a minimum of 15 hours.

Unit 01: Use of Farm Hand tools and Equipment

| Unit Reference Number: AGR/AEO/L1/01 | | | | | | | |
|--------------------------------------|----|--|--|--|--|--|--|
| Level: | 1 | | | | | | |
| Credit Value: | 1 | | | | | | |
| Guided Learning Hours: | 10 | | | | | | |

Unit Purpose:

This unit is designed to provide learner with knowledge and skills of manual farm hand tools

Objectives:

At the end of this unit, the learner should be able to:

- 1. Recognize the use of hand tools for clearing and tillage operations
- 2. Use hand tools for seedbed preparation and planting
- 3. Use Equipment for crop protection
- 4. Use hand tools and equipment for chemical fertilizer/ manure application
- 5. Use hand tools and Equipment for harvesting of crops

Unit assessment requirements/evidence requirements:

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

- 1. Direct Observation/Oral Questions and Answer (DO).
- 2. Question and Answer (QA).
- 3. Reflective Journal (RJ).
- 4. Personal Statement (PS)
- 5. Examine Work Product (WP)
- 6. Witness Testimony (WT)

| LEARNING OBJECTIVE (LO) | | | | Evidence Type | | | ef. | nce Pag | e | |
|-------------------------------|-----|--|--|------------------|---|--|-----|------------|---|--|
| The learner will: | | The learner can: | | | | | | | | |
| LO 1: | 1.1 | Recognize farm hand tools and equipment | | | | | | | | |
| Use hand tools | 1.2 | Group farm tools and equipment based on | | | | | | | | |
| for clearing and | | crops production: | | | | | | | | |
| tillage | | Tuber crops | | | | | | | | |
| Operations | | Cereals crops | | | | | | | | |
| | | Fruits | | | | | | | | |
| | 1.3 | Identify the uses of different groups of farm | | | | | | | | |
| | | tools and equipment: | | | | | | | | |
| | | Machete | | | | | | | | |
| | | Cutlass | | | | | | | | |
| | | Diggers | | | | | | | | |
| | | Rakes | | | | | | | | |
| | | Knapsack | | | | | | | | |
| | | ULV Sprayer | | | | | | | | |
| | | Hand Planter | | | | | | | | |
| | 1.4 | Identify types of soils: | | | | | | | | |
| | | • Clay | | | | | | | | |
| | | • Sandy | | | | | | | | |
| | | Loamy | | | | | | - | | |
| | 1.5 | Select proper hand tool based on: | | | | | | | | |
| | | Soil type | | | | | | | | |
| | 4 5 | Crop type | | | | | | | | |
| | 1.5 | Clear the farm plot using appropriate hand tools | | | | | | | | |
| | 1.6 | Till the soil using appropriate hand tools; | | | | | | | | |
| | 1.0 | machete, cutlass, diggers, rakes, axe | | | | | | | | |
| | 1.7 | Carryout maintenance of farm hand tools | | | | | | | | |
| | 1.7 | and equipment | | | | | | | | |
| | 1.8 | Carryout the safety measures required in | | | | | | | | |
| | | handling farm hand tools and equipment | | | | | | | | |
| | | | | | | | | | | |
| LO 2: | 2.1 | Identify hand tools for seedbed preparation | | | | | | | | |
| Use hand tools | | and planting | | | | | | | | |
| for seedbed | 2.2 | Use different hand tools and equipment in | | | | | | | | |
| preparation and | | preparation of seedbeds | | | | | | | | |
| planting | 2.3 | Operate hand planter. | | | 1 | | | | | |
| | 2.4 | Carryout maintenance of tools and | | | | | | | | |
| | | equipment use in hand planting and | | | | | | | | |
| | | seedbeds preparation. | | | | | | | | |
| | 2.5 | Carryout the safety measures required in | | | | | | | | |
| | | handling farm tools and equipment. | | | | | | | | |

| L0 3: | 3.1 | Identify hand tools for mechanical crop | | | | | |
|-------------------|-----|---|--|------|--|------|--|
| Use hand tools | | protection: | | | | | |
| for crop | | Cutlass | | | | | |
| protection | | • Hoe | | | | | |
| | | Rake | | | | | |
| | 3,2 | Carryout weeding using mechanical hand | | | | | |
| | | tools | | | | | |
| | 3.3 | Identify hand equipment for chemical crop | | | | | |
| | | protection: | | | | | |
| | | Knapsack | | | | | |
| | | Multipurpose garden sprayer | | | | | |
| | 3.4 | Select appropriate herbicides for crop | | | | | |
| | | protection/weeding | | | | | |
| | 3.5 | Carryout weeding using chemical application hand tools | | | | | |
| | 3.6 | Carryout maintenance of hand tools and | | | | | |
| | 5.0 | equipment for crop protection | | | | | |
| LO 4: | 4.1 | Identify hand tools and equipment for | | | | | |
| Use hand tools | 7.1 | fertilizer/ manure application: | | | | | |
| and equipment | 4.0 | | | | | | |
| for chemical | 4.2 | Operate tools and equipment use for chemical fertilizer/manure application. | | | | | |
| fertilizer/ | 4.3 | Carryout maintenance of tools and | | | | | |
| manure | | equipment use for fertilizer/ manure | | | | | |
| application | | application: | | | | | |
| | | | | | | | |
| LO 5: | 5.1 | Identify hand tools for harvesting crops | | | | | |
| Use hand tools | 5.2 | Harvest crops using appropriate tools or | | | | | |
| for harvesting of | | equipment | | | | | |
| crops | 5.5 | Carryout the safety measures required in | | | | | |
| | | handling hand tools and equipment for | | | | | |
| | | harvesting crops | | | | | |
| | 5.6 | Carryout maintenance of hand tools and | | | | | |
| | | equipment use for harvesting of crops | | | | | |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date: |

UNIT 02: Occupational Health and Safety

| Unit Reference Number: AGR/AEO/L1/02 | | | | | | | | |
|--------------------------------------|---|--|--|--|--|--|--|--|
| Level: | 1 | | | | | | | |
| Credit Value: | 2 | | | | | | | |

Guided Learning Hours: 20

Unit Purpose: This unit specifies the competencies required to demonstrate safe work practices. It involves learning about workplace safety, correct use of signs and symbols, identifying and reducing risks of hazards in the work environment.

Objectives:

At the end of this unit, the learner should be able to:

- Demonstrate Safe working Practices and Instructions
- Understand Safety Hazards and risks
- Know how to take appropriate actions during accident/injury
- Demonstrate safe work habit and clean work environment

Unit assessment requirements/ evidence requirement

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

- 1. Direct Observation/oral questions (DO).
- 2. Question and Answer (QA).
- 3. Professional Discussion (PD).
- 4. Personal Statement (PS)
- 5. Examine Work Product
- 6. Witness Testimony (WT)

UNIT 02: Occupational Health and Safety

| LEARNING OBJECTIVE (LO) | | PERFORMANCE CRITERIA | | Evidence Type | | | | | | | | | | denc . Pa | - |
|-------------------------------|-----|--|--|------------------|--|--|--|--|--|--|--|--|--|--------------|---|
| The learner will: | | The learner can: | | | | | | | | | | | | | |
| LO 1: Identify | 1.1 | Explain safety work practice and instructions. | | | | | | | | | | | | | |
| the various safe | 1.2 | Explain safety signs and symbols. | | | | | | | | | | | | | |
| working | 1.3 | Identify safety signs and symbols | | | | | | | | | | | | | |
| Practices and | 1.4 | Describe how to work in accordance with | | | | | | | | | | | | | |
| Instructions | | health and safety best practices. | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| LO 2: Recognize | 2.1 | Explain various work environment hazards. | | | | | | | | | | | | | |
| Safety Hazards | 2.2 | Describe ways to reduce risk in workplace | | | | | | | | | | | | | |
| and risks | 2.2 | Describe ways to avoid common workplace | | | | | | | | | | | | | |
| | | hazards | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| LO 3: | 3.1 | Describe the safe access and exit routes in | | | | | | | | | | | | | |
| Understand the | | the work environment. | | | | | | | | | | | | | |
| safe work habit | 3.2 | Explain safe work habit and clean work | | | | | | | | | | | | | |
| and clean work | | environment. | | | | | | | | | | | | | |
| environment | 3.3 | Use proper Personnel Protective Equipment | | | | | | | | | | | | | |
| | | (PPE) at workplace | | | | | | | | | | | | | |
| | 3.4 | Explain how to dispose all wastes | | | | | | | | | | | | | |
| | | appropriately to designated waste facilities | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date |

UNIT 03: Communication and Interpersonal Skills

Unit Reference Number: AGR/AEO/L1/03 Level: 1 Credit Value: 2 Guided Learning Hours: 20

Unit Purpose: This unit specifies the competencies required to demonstrate good communication and interpersonal skills. It involves the ability to read and understand documented instructions and the ability to know how to communicate respectfully when in a bad mood or under pressure.

Objectives:

At the end of this unit, the learner should be able to:

- Understand the importance of good communication
- Demonstrate how to follow documented instructions
- Know how to create documented instructions

Unit assessment requirements/ evidence requirements:

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

- 1. Direct Observation/oral questions (DO).
- 2. Question and Answer (QA).
- 3. Professional Discussion (PD).
- 4. Personal Statement (PS)
- 5. Examine Work Product (WP)
- 6. Witness Testimony (WT)

| LEARNING OBJECTIVE (LO) | | PERFORMANCE CRITERIA Evidence Type | | | | | | 2 | Evi Ref No. | ce Page |
|---|-------------------|---|--|---|--|--|--|---|-------------------|------------|
| The learner will: | | The teamer can. | | _ | | | | | | |
| LO 1: Recognize | 1.1 | Define communication. | | | | | | | | |
| the concept of communication | 1.2 | Distinguish between the different types of communication. | | | | | | | | |
| | 1.3 | Select factors to be considered when using each method in 1.2. | | | | | | | | |
| | | | | | | | | | | |
| LO 2: Understand | 2.1 | State the reasons for using signs and symbols in workshops, offices and public places. | | | | | | | | |
| signs and symbols used to | 2.2 | Explain why good communication is important. | | | | | | | | |
| communicate. | 2.3 | Draw signs and symbols commonly used in work spaces. | | | | | | | | |
| | 2.4 | Interpret signs and symbols commonly used in work spaces. | | | | | | | | |
| | | | | | | | | | | |
| LO 3: Understand information from any given document. | 3.1 3.2 3.3 | Comprehend information from: - charts log books warning instructions manuals operation procedures, etc. State reasons for good understanding of information given in the documents in 3.1. State steps necessary when skipping through bulky information manuals. | | | | | | | | |
| | | butty mormation manuals. | | | | | | | | |
| | | | | | | | | | | |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date |

UNIT 04: TEAM WORK

| Unit Reference Number: AGR/AEO/L1/04 | | | | | | | |
|--------------------------------------|----|--|--|--|--|--|--|
| Level: | 1 | | | | | | |
| Credit Value: | 1 | | | | | | |
| Guided Learning Hours: | 10 | | | | | | |

Unit Purpose: This unit is aimed to impact into the leaner, the necessary knowledge and skills required to develop team spirit and positive working relationship with the fellow operators in Agricultural Equipment Operation.

Objectives:

At the end of this unit, the learner should be able to:

- Develop positive working relationship with colleagues in the work environment
- Take responsibilities within the team
- Comply with policy and regulations of organization.

Unit assessment requirements/ evidence requirement

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

- 1. Direct Observation/Oral questions (DO).
- 2. Question and Answer (QA).
- 3. Witness Testimony (WT)
- 4. Personal Statement (PS)
- 5. Professional Discussion (PD)

UNIT 04: Team Work

| LEARNING OBJECTIVE (LO) | | PERFORMANCE CRITERIA | | Evidence Type | | | | | f. | nce Paş | |
|---------------------------------|-----|---|--|------------------|--|--|--|--|----|------------|--|
| The learner will: | | The learner can: | | | | | | | | | |
| LO 1: Understand | 1.1 | Define Team/Teamwork | | | | | | | | | |
| Teamwork in | 1.2 | State the benefit (s) of working as a Team | | | | | | | | | |
| Equipment Operation | 1.3 | State the challenges of Teamwork | | | | | | | | | |
| | | | | | | | | | | | |
| LO 2: | 2.1 | Recognise the qualities of a good Leader, | | | | | | | | | |
| Understand | 2.2 | Explain the benefits of good Leadership | | | | | | | | | |
| Leadership in Teamwork | 2.3 | State the benefits of loyalty and confidentiality | | | | | | | | | |
| | | | | | | | | | | | |
| LO 3: Understand | 3.1 | Recognise the essence of good working relationship in a Team | | | | | | | | | |
| good working relationship | 3.2 | Explain the contributions of other Team members to ensure good health and social wellbeing in the workplace. | | | | | | | | | |
| in a Team | 3.3 | Identify strategies for good working relationship | | | | | | | | | |
| | 3.4 | Explain organizational code of conduct for own job and teamwork. | | | | | | | | | |
| | 3.5 | Report activities of the teamwork that may negatively affect organizational code of conduct to the appropriate authority. | | | | | | | | | |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date |

Unit 05: Use of Animal Draught tools and implements

Unit Reference Number: AGR/AEO/L1/05

Level: 1 Credit Value: 2 Guided Learning Hours:

20

Unit Purpose:

This unit is designed to provide learner with knowledge and skills of using Animal Draught Tools and Implements.

Objectives:

At the end of this unit, the learner should be able to:

- 1. Recognize Animals and tools for farm operation.
- 2. Use Animal tools for tillage operations
- 3. Use of cart for Transportation in farm operations

Unit assessment requirements/evidence requirements:

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

- 1. Direct Observation/Oral questions (DO).
- 2. Question and Answer (QA).
- 3. Reflective Journal (RJ).
- 4. Examine Work Product (WP)
- 5. Witness Testimony (WT)
- 6. Personal Statement (PS)

| LEARNING OBJECTIVE (LO) The learner | | PERFORMANCE CRITERIA The learner can: | Evidence Type | | | f. | nce Pag | e | |
|--|-----|--|----------------------|--|--|----|------------|---|---|
| will: | | The tearner can: | | | | | | | |
| LO 1: | 1.1 | Identify animals for farm operations | | | | | | | |
| Recognise Animals and | 1.2 | Identify the tools and implements use for farm operations | | | | | | | |
| tools for farm | 1.3 | Identify Animal drawn tools and implements | | | | | | | |
| operation. | 1.4 | Identify Animal hitching components. | | | | | | | |
| | 1.5 | Couple tools and implement to drought animals | | | | | | | |
| | 1.6 | Use drought animals for farm operation | | | | | | | |
| | 1.5 | Recognize drought animal ethnics while using animal for farm operation | | | | | | | |
| | 1.6 | Carryout feeding of the drought animal | | | | | | | |
| | | | | | | | | | |
| LO 2: | 2.1 | Identify Animal Tillage operation tools | | | | | | | |
| Use Animal tools for tillage | 2.2 | Couple the tools and implement to the Animal for operation | | | | | | | |
| operations. | 2.3 | Carry out adjustment of the implements. | | | | | | | |
| | 2.4 | Perform tillage operation. | | | | | | | |
| | 2.5 | Carryout maintenance of tillage operation tools | | | | | | | |
| | | | | | | | | | |
| LO 3: | 3.1 | Recognize Cart for transportation | | | | | | | |
| Use of cart for | 3.2 | Couple the cart to the Bull | | | | | | | |
| Transportation | 3.3 | Use cart for farm operation | | | | | | | _ |
| in farm operations | 3.4 | Demonstrate health and safety in cart for farm operation | | | | | | | |
| | | | | | | | | | |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | |

UNIT 06: Operation of Power Tiller Implement and Equipment

| Unit Reference Number: AGR/AEO/L1/06 | | | | | | |
|--------------------------------------|----|--|--|--|--|--|
| Level: | 1 | | | | | |
| Credit Value: | 3 | | | | | |
| Guided Learning Hours: | 30 | | | | | |

Unit Purpose:

This unit is designed to provide learner with knowledge and skills of operating a power tillers, Implement and Equipment

Objectives:

At the end of this unit, the learner should be able to:

- 1. Recognize Power Tiller and attachments
- 2. Operate Power tiller for tillage operations
- 3. Operate Power Tiller for crop harvesting and other operations

Unit assessment requirements/ evidence requirements:

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

- 1. Direct Observation/Oral questions (DO).
- 2. Question and Answer (QA).
- 3. Witness Testimony (WT)
- 4. Personal Statement (PS)
- 5. Examine Work Product (WP)

| LEARNING OBJECTIVE (LO) The learner will: | | PERFORMANCE CRITERIA The learner can: | vide vpe | nce | | Ev Re No | nce Pa | ge |
|---|-----|--|-------------|-----|--|----------------|-----------|----|
| LO 1: | 1.1 | Identify Power Tiller. | | | | | | |
| Recognize | 1.2 | Identify different components of Power Tiller | | | | | | |
| Power Tiller | 1.3 | Carry out preparatory checks for safe operation | | | | | | |
| and attachments | 1.4 | Identify tillage implements use on power tillers | | | | | | |
| | | | | | | | | |
| LO 2: | 2.1 | Select implements for tillage operations: | | | | | | |
| Operate | 2.2 | Couple the tillage implement to power tiller | | | | | | |
| Power tiller | 2.3 | Select operation speed | | | | | | |
| for tillage | 2.4 | Carry out selected operation | | | | | | |
| operations | 2.5 | Use Power Tiller to till the land. | | | | | | |
| | 2.6 | Secure the equipment after operations | | | | | | |
| | | | | | | | | |
| LO 3: Operate | 3.1 | Select appropriate implements for crop harvesting and other operations | | | | | | |
| Power Tiller | 3.2 | Couple the implement to the power tiller | | | | | | |
| for crop | 3.3 | Select operation speed | | | | | | |
| harvesting and other operations | 3.4 | Use Power Tiller to harvest crop. | | | | | | |
| | | | | | | | | |

UNIT 06: Operation of Power Tiller Implement and Equipment

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date: |

UNIT 07: Operation of Farm Tractors, Implement and Equipment

| Unit Reference Number: AGR/AEO/L1/07 | | | | | | |
|--------------------------------------|----|--|--|--|--|--|
| Level: | 1 | | | | | |
| Credit Value: | 5 | | | | | |
| Guided Learning Hours: | 50 | | | | | |

Unit Purpose:

This unit is designed to provide learner with basic knowledge of farm tractors, implement and equipment

Objectives:

At the end of this unit, the learner should be able to:

- 1. Understand Farm Tractors, Implement and Equipment
- 2. Recognize components of the tractor concerned with driving
- 3. Carryout tractor pre-trip inspection
- 4. Recognize the hitching and adjustment components of a tractor

Unit assessment requirements/ evidence requirements:

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

- 1. Direct Observation/Oral questions (DO).
- 2. Question and Answer (QA).
- 3. Witness Testimony (WT)
- 4. Personal Statement (PS)
- 5. Examine Work Product (WP)
- 6. Professional Discussion (PD)

UNIT 07: Operation of Farm Tractors, Implement and Equipment

| LEARNING OBJECTIVE (LO) | | PERFORMANCE CRITERIA | | Evidence Type | | | Туре | | Evi Ref No. | ice Pag | şe |
|--|-----|---|--|------------------|---|---|------|-----|-------------------|------------|----|
| The learner will: | | The learner can: | | 1 | r | 1 | | - 1 | | | |
| LO1: | 1.1 | Describe a tractor | | | | | | | | | |
| Understand Farm | 1,2 | Recognise types of tractor implement | | | | | | | | | |
| Tractors, Implement and | 1.0 | and equipment | | | | | | | | | |
| Equipment | 1.3 | Identify tractor implement and | | | | | | | | | |
| | 1.4 | equipment | | | | | | | | | |
| | 1.4 | Recognize different types of tractors | | | | | | | | | |
| | 1.5 | Distinguish between different types of tractors | | | | | | | | | |
| L02: | 2.1 | Describe major components of tractor. | | | | | | | | | |
| Recognize components of | 2.2 | Explain the procedure for coupling | | | | | | | | | |
| the tractor concerned | | tractor implement or equipment | | | | | | | | | |
| with driving | 2.3 | Explain the procedure for driving tractor | | | | | | | | | |
| | 2.4 | Identify road traffic signs and symbols | | | | | | | | | |
| L03: | 3.1 | Check water level in the radiator | | | | | | | | | |
| Carryout tractor pre-trip inspection | 3.2 | Check engine oil level | | | | | | | | | |
| | 3.3 | Check fuel level | | | | | | | | | |
| | 3.4 | Check air pressure of tires | | | | | | | | | |
| | 3.5 | Check hydraulic level | | | | | | | | | |
| | 3.6 | Check heads and trafficating lights | | | | | | | | | |
| | 3.7 | Check for lose bolts and knots and retied | | | | | | | | | |
| LO 4: Recognize the hitching and adjustment components of a tractor | 4.1 | Identify the following: • three-point linkages, • check chains, • stabilizers, • hydraulic controls for draft and | | | | | | | | | |
| | | positionpower take-off(PTO),drawbar. | | | | | | | | | |
| | 4.2 | Explain the classes of implements: fully mounted, semi-mounted trailed implements. | | | | | | | | | |
| | 4.3 | Hitch an implement to three-point linkages | | | | | | | | | |
| | 4.4 | Couple an implement to power take-off(PTO), | | | | | | | | | |
| | 4.5 | Couple an implement to drawbar | | | | | | | | | |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | |

UNIT 08: OPERATION OF THRESHING, SHELLING AND DECORTICATING EQUIPMENT

| Unit Reference Number: AGR/AEO/L1/08 | | | | | | | |
|--------------------------------------|---|--|--|--|--|--|--|
| Level: | 1 | | | | | | |

| Credit Value: | 4 |
|------------------------|----|
| Guided Learning Hours: | 40 |

Unit Purpose:

This unit is designed to provide learner with knowledge and skills of threshing, shelling and decorticating

Objectives:

At the end of this unit, the learner should be able to:

- 1. Understand threshing, shelling and decorticating
- 2. Understand threshing equipment
- 3. Understand shelling equipment
- 4. Understand decortication equipment

Unit assessment requirements/ evidence requirements:

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

- 1. Direct Observation/Oral questions (DO).
- 2. Question and Answer (QA).
- 3. Witness Testimony (WT)
- 4. Personal Statement (PS)
- 5. Examine Work Product (WP)

UNIT 08: OPERATIONS OF THRESHING, SHELLING AND DECORTICATING EQUIPMENT

| LEARNING OBJECTIVE (LO) The learner will: | | PERFORMANCE CRITERIA The learner can: | Evidence Type | | | Туре | | R | vide ef. Io. | nce Pa | |
|---|-----|--|------------------|--|---|------|--|---|--------------------|-----------|--|
| L01: | 1.1 | Explain threshing, shelling and | | | | | | | | | |
| Understand threshing, | | decortication | | | | | | | | | |
| shelling and | 1.2 | Differentiate between threshing, | | | | | | | | | |
| decorticating | | shelling and decorticating | | | | | | | | | |
| | 1.3 | Describe threshing, shelling and | | | | | | | | | |
| | | decorticating equipment | | | | | | | | | |
| | 1.4 | Use thresher, sheller and decorticating | | | | | | | | | |
| | | equipment appropriately | | | | | | | | | |
| | 1.5 | Store and Secure the equipment after | | | | | | | | | |
| | | use | | | | | | | | | |
| L02: | 2.1 | Identify threshing equipment | | | | | | | | | |
| Understand threshing | 2.2 | Identify components of threshing | | | | | | | | | |
| equipment | | equipment | | | | | | | | | |
| | 2.3 | Select threshing equipment for a | | | | | | | | | |
| | | specific crop | | | | | | | | | |
| | 2.4 | Select appropriate power unit for | | | | | | | | | |
| | | threshing equipment in 2.3 above | | | | | | | | | |
| | 2.5 | Carryout concave cylinder adjustment | | | | | | | | | |
| | 2.6 | Carryout threshing operations | | | | | | | | | |
| L03: | 3.1 | Identify shelling equipment | | | | | | | | | |
| Understand shelling | 3.2 | Identify components of shelling | | | | | | | | | |
| equipment | | equipment | | | | | | | | | |
| | 3.3 | Select shelling equipment for a | | | | | | | | | |
| | | specific crop | | | | | | | | | |
| | 3.4 | Select appropriate power unit for | | | | | | | | | |
| | | shelling equipment in 3.3 above | | | | | | | | | |
| | 3.5 | Carryout concave cylinder adjustment | | | | | | | | | |
| | 3.6 | Carryout shelling operations | | | | | | | | | |
| LO 4: | 4.1 | Identify decortication equipment | | | | | | | | | |
| Understand | 4.2 | Identify components of decortication | 1 | | 1 | | | | 1 | | |
| decortication equipment | | equipment | | | | | | | | l | |
| | 4.3 | Select decortication equipment for a | | | | | | | | | |
| | | specific crop | | | | | | | | | |
| | 4.4 | Select appropriate power unit for | | | | | | | 1 | | |
| | | decortication equipment in 2.3 above | | | | | | | | | |
| | 4.5 | Carryout concave cylinder adjustment | | | | | | | 1 | | |
| | 4.6 | Carryout decortication operations | | | | | | | 1 | | |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date: |

NATIONAL SKILLS QUALIFICATION

AGRICULTURAL EQUIPMENT OPERATION

LEVEL 2

FEBRUARY, 2025

NATIONAL OCCUPATIONAL STANDARDS AGRICULTURAL EQUIPMENT OPERATION LEVEL 2

GENERAL INFORMATION

QUALIFICATION PURPOSE

This qualification is aimed at developing a learner as Agricultural Equipment Operator, and shall be expected to have knowledge and competences in the use and operation of modern farm equipment for tilling, planting, etc.

QUALIFICATION OBJECTIVES

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

- Operate primary and secondary tillage equipment
- Operate planting and transplanting equipment
- Operate Chemical fertilizer and manure application equipment.
- Operate crop protection equipment.
- Operate harvesting equipment.
- Operate Crop processing and storage equipment
- Operate Livestock mechanization equipment
- Carryout livestock sanitary and hygiene practices
- Demonstrate effective communication and interpersonal relationship at work place.
- Observe health and safety at the work place.
- Demonstrate Team Work at the work place.

| S/No | Reference Number | Units | Credit Value | Guided Learning Hours | Remarks |
|-------|------------------|---|-----------------|-----------------------------|---------------------------|
| 1 | AGR/AEO/L2/01 | Occupational Health and Safety | 2 | 20 | Culled from level 1 |
| 2 | AGR/AEO/L2/02 | Communication and Interpersonal Skills | 2 | 20 | Culled from level 1 |
| 3 | AGR/AEO/L2/03 | Team Work | 1 | 10 | Culled from level 1 |
| 4 | AGR/AEO/L2/04 | Operation of Tillage Equipment | 3 | 30 | Level 2 |
| 5 | AGR/AEO/L2/05 | Livestock Sanitary And Hygiene | 2 | 20 | Level 2 |
| 6 | AGR/AEO/L2/06 | Operation of Chemical fertilizer and manure application Equipment | 3 | 30 | Level 2 |
| 7 | AGR/AEO/L2/07 | Operation of Crop Protection Equipment | 3 | 30 | Level 2 |
| 8 | AGR/AEO/L2/08 | Operation of Crop processing and storage equipment | 3 | 30 | Level 2 |
| SUBT | DTAL | | 19 | 190 | |
| | | OPTIONAL UNITS | | | Level 2 |
| 9 | AGR/AEO/L2/09 | Operation of Harvesting Equipment | 4 | 40 | Level 2 |
| 10 | AGR /AEO/L2/10 | Operation of Livestock mechanization equipment | 4 | 40 | Level 2 |
| 11 | AGR/AEO/L2/11 | Operation of Planting and Transplanting Equipment | 3 | 30 | Level 2 |
| SUBTO | DTAL | | 11 | 110 | |
| Total | | | 30 | 300 | |

Mandatory Units

NOTE: This is a 30-credit unit qualification. To achieve this qualification; Learners are required to achieve all credits units in the mandatory units and additional two (2)units in the optional units.. 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% – 150% of the GLH. The actual Total Learning Hours for each Credit will then be a minimum of 15 hours.

UNIT 01: Occupational Health and Safety

Unit Reference Number: AGR/AEO/L2/01

Level:2Credit Value:2Guided Learning Hours:20

Unit Purpose: This unit specifies the competencies required to demonstrate safe work practices. It involves learning about workplace safety, correct use of signs and symbols, identifying and reducing risks of hazards in the work environment.

Objectives:

At the end of this unit, the learner should be able to:

- Demonstrate Safe working Practices and Instructions
- Understand Safety Hazards and risks
- Know how to take appropriate actions during accident/injury
- Demonstrate safe work habit and clean work environment

Unit assessment requirements/ evidence requirement

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

- 1. Direct Observation/oral questions (DO).
- 2. Question and Answer (QA).
- 3. Professional Discussion (PD).
- 4. Personal Statement (PS)
- 5. Examine Work Product
- 6. Witness Testimony (WT)

UNIT 01: Occupational Health and Safety

| LEARNING OBJECTIVE (LO) | | PERFORMANCE CRITERIA | Evidence Type | | | Evidence Ref. Page No. | | | | |
|-----------------------------------|-----|--|----------------------|--|--|------------------------------|--|--|--|--|
| The learner will: | | The learner can: | | | | | | | | |
| LO 1: Identify | 1.1 | Explain safety work practice and instructions. | | | | | | | | |
| the various safe | 1.2 | Explain safety signs and symbols. | | | | | | | | |
| working | 1.3 | Identify safety signs and symbols | | | | | | | | |
| Practices and Instructions | 1.4 | Describe how to work in accordance with health and safety best practices. | | | | | | | | |
| | | | | | | | | | | |
| LO 2: Recognize | 2.1 | Explain various work environment hazards. | | | | | | | | |
| Safety Hazards | 2.2 | Describe ways to reduce risk in workplace | | | | | | | | |
| and risks | 2.2 | Describe ways to avoid common workplace hazards | | | | | | | | |
| | | | | | | | | | | |
| LO 3: Understand the | 3.1 | Describe the safe access and exit routes in the work environment. | | | | | | | | |
| safe work habit and clean work | 3.2 | Explain safe work habit and clean work environment. | | | | | | | | |
| environment | 3.3 | Use proper Personnel Protective Equipment (PPE) at workplace | | | | | | | | |
| | 3.4 | Explain how to dispose all wastes appropriately to designated waste facilities | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date |

UNIT 02: Communication and Interpersonal Skills

Unit Reference Number: AGR/AEO/L2/02 Level: 2 Credit Value: 2 Guided Learning Hours: 20

Unit Purpose: This unit specifies the competencies required to demonstrate good communication and interpersonal skills. It involves the ability to read and understand documented instructions and the ability to know how to communicate respectfully when in a bad mood or under pressure.

Objectives:

At the end of this unit, the learner should be able to:

- Understand the importance of good communication
- Demonstrate how to follow documented instructions
- Know how to create documented instructions

Unit assessment requirements/ evidence requirements:

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

- 1. Direct Observation/oral questions (DO).
- 2. Question and Answer (QA).
- 3. Professional Discussion (PD).
- 4. Personal Statement (PS)
- 5. Examine Work Product (WP)
- 6. Witness Testimony (WT)

| LEARNING OBJECTIVE (LO) | | PERFORMANCE CRITERIA The learner can: | Evidence Type | | | Evidence Ref. Page No. | | |
|---|-------------------|--|----------------------|--|--|------------------------------|--|--|
| The learner will: | | The teamer can. | _ | | | | | |
| LO 1: Recognize | 1.1 | Define communication. | | | | | | |
| the concept of communication | 1.2 | Distinguish between the different types of communication. | | | | | | |
| | 1.3 | Select factors to be considered when using each method in 1.2. | | | | | | |
| | | | | | | | | |
| LO 2: Understand | 2.1 | State the reasons for using signs and symbols in workshops, offices and public places. | | | | | | |
| signs and symbols used to | 2.2 | Explain why good communication is important. | | | | | | |
| communicate. | 2.3 | Draw signs and symbols commonly used in work spaces. | | | | | | |
| | 2.4 | Interpret signs and symbols commonly used in work spaces. | | | | | | |
| | | | | | | | | |
| LO 3: Understand information from any given document. | 3.1 3.2 3.3 | Comprehend information from: - charts log books warning instructions manuals operation procedures, etc. State reasons for good understanding of information given in the documents in 3.1. State steps necessary when skipping through hellowing formation given and the steps in the | | | | | | |
| | | bulky information manuals. | | | | | | |
| | | | | | | | | |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date |

UNIT 03: TEAM WORK

Unit Reference Number: AGR/AEO/L2/03 Level: 2 Credit Value: 1 Guided Learning Hours: 10

Unit Purpose: This unit is aimed to provide the leaner, the necessary knowledge and skills required to develop team spirit and positive working relationship with the fellow operators in Agricultural Equipment Operation.

Objectives:

At the end of this unit, the learner should be able to:

- Develop positive working relationship with colleagues in the work environment
- Take responsibilities within the team
- Comply with policy and regulations of organization.

Unit assessment requirements/ evidence requirement

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

- 1. Direct Observation/Oral questions (DO).
- 2. Question and Answer (QA).
- 3. Witness Testimony (WT)
- 4. Personal Statement (PS)
- 5. Professional Discussion (PD)

UNIT 03: Team Work

| LEARNING OBJECTIVE (LO) | | PERFORMANCE CRITERIA | | Evidence Type | | | | | | f. | nce Paş | |
|--|-----|---|--|------------------|--|--|--|--|--|----|------------|--|
| The learner will: | | The learner can: | | | | | | | | | | |
| LO 1: Understand | 1.1 | Define Team/Teamwork | | | | | | | | | | |
| Teamwork in | 1.2 | State the benefit (s) of working as a Team | | | | | | | | | | |
| Equipment Operation | 1.3 | State the challenges of Teamwork | | | | | | | | | | |
| | | | | | | | | | | | | |
| LO 2: | 2.1 | Recognise the qualities of a good Leader, | | | | | | | | | | |
| Understand | 2.2 | Explain the benefits of good Leadership | | | | | | | | | | |
| Leadership in Teamwork | 2.3 | State the benefits of loyalty and confidentiality | | | | | | | | | | |
| | | | | | | | | | | | | |
| LO 3: Understand | 3.1 | Recognise the essence of good working relationship in a Team | | | | | | | | | | |
| good working relationship in a Team | 3.2 | Explain the contributions of other Team members to ensure good health and social wellbeing in the workplace. | | | | | | | | | | |
| | 3.3 | Identify strategies for good working relationship | | | | | | | | | | |
| | 3.4 | Explain organizational code of conduct for own job and teamwork. | | | | | | | | | | |
| | 3.5 | Report activities of the teamwork that may negatively affect organizational code of conduct to the appropriate authority. | | | | | | | | | | |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date |

Guided Learning Hours:

UNIT 04: Operation of Tillage Equipment

| Unit Reference Number: AGR/AEO/L2/04 | | | | | | | |
|--------------------------------------|---|--|--|--|--|--|--|
| Level: | 2 | | | | | | |
| Credit Value: | 3 | | | | | | |

Unit Purpose:

This unit is design to provide the learner with knowledge and skills for the operation of Tillage equipment.

Objectives:

At the end of this unit, the learner should be able to:

- 1. Understand tillage implement
- 2. Carryout tillage operation using primary tillage implement

30

- 3. Carryout tillage operation using secondary tillage Implement
- 4. Understand tillage techniques

Unit assessment requirements/ evidence requirements:

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

- 1. Direct Observation/Oral questions (DO).
- 2. Question and Answer (QA).
- 3. Personal Statement (PS)
- 4. Witness Testimony (WT)
- 5. Examine Work Product (WP)

| LEARNING 1 | | | E. | vida | nee | | | Evidence | | | | | |
|------------------|-----|--|----------|------|-----|---|--|----------|---|------|--|--|--|
| OBJECTIVE | | PERFORMANCE CRITERIA | Evidence | | | | | | | | | | |
| | | | Туре | | | | | | | Page | | | |
| (LO) | | | | | | | | No | • | | | | |
| | | The learner can: | | | | | | | | | | | |
| The learner | | | | | | | | | | | | | |
| will: | | | | | | | | | | | | | |
| LO 1: | 1.1 | Distinguish between primary and secondary | | | | | | | | | | | |
| Understand | | tillage Implement. | | | | | | | | | | | |
| tillage | 1.2 | Recognize the functions of various tillage | | | | | | | | | | | |
| implement | | Implement | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | |
| | 1.3 | identify the factors in tillage operation. | | | | | | | | | | | |
| | 1.5 | identity the lactors in mage operation. | | | | | | | | | | | |
| LO 2: | 2.1 | Select appropriate implement for primary | | | | | | | | | | | |
| | 2.1 | | | | | | | | | | | | |
| Carryout tillage | 0.0 | tillage operation | | | | | | | | | | | |
| operation using | 2.2 | Explain the effects of tillage on physical | | | | | | | | | | | |
| primary tillage | | properties of the soil | | | | | | | | | | | |
| implement | | | | | | | | | | | | | |
| | 2.3 | Carry out primary Tillage operation. | | | | | | | | | | | |
| | 2.4 | Observe health and safety in carrying out | | | | | | | | | | | |
| | | primary tillage operation | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| LO 3: | 3.1 | Select appropriate implement for secondary | | | | | | | | | | | |
| Carryout tillage | | tillage operation | | | | | | | | | | | |
| operation using | 3.2 | Explain the effects of tillage on physical | | | | | | | | | | | |
| secondary | | properties of the soil | | | | | | | | | | | |
| tillage | | | | | | | | | | | | | |
| Implement | 3.3 | Carry out primary Tillage operation. | | | | | | | | | | | |
| | 3.4 | Observe health and safety in carrying out | | | | | | | | | | | |
| | 5.4 | secondaryS tillage operation | | | | | | | | | | | |
| | 11 | | | | | | | | _ | | | | |
| LO 4: | 4.1 | Carryout depth control during tillage | | | | | | | | | | | |
| Understand | | operation | | | | | | | | | | | |
| tillage | 4.2 | Carryout speed control of the tractor | | | | | | | | | | | |
| techniques | 4.3 | Perform soil moisture management | | | | | | | | | | | |
| | 1 | | 1 | 1 | 1 | 1 | | | | 1 | | | |

UNIT 04: Operation of Tillage Equipment

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date |

UNIT 05: LIVESTOCK SANITARY AND HYGIENE

| Unit Reference | Number: | AGR/ | /AEO/L | 2/05 |
|----------------|---------|------|--------|------|
|----------------|---------|------|--------|------|

Level: 2

| Guided | Learning Hours: | 20 |
|--------|-----------------|----|

Unit Purpose:

Credit Value: 2

This unit is design to provide learners with the knowledge and skills of livestock sanitation and hygiene

Objectives:

At the end of this unit, the learner should be able to:

- 1. Understand livestock sanitary and hygiene
- 2. Understand animal housing and environment
- 3. Understand animal health and hygiene
- 4. Know feed and water hygiene
- 5. Know farm sanitation and disinfection
- 6. Know personnel hygiene and bio-security

Unit assessment requirements/ evidence requirements:

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

- 1. Direct Observation/Oral questions (DO).
- 2. Question and Answer (QA).
- 3. Personal Statement (PS)
- 4. Witness Testimony (WT)

UNIT 05: LIVESTOCK SANITARY AND HYGIENE

| LEARNING OBJECTIVE (LO) The learner will: | | PERFORMANCE CRITERIA The learner can: | vide vpe | nce | • | Evido Ref. No. | ence Pag | şe. |
|---|-----|---|-------------|-----|---|----------------------|-------------|-----|
| LO 1: | 1.1 | Define sanitary and hygiene | | | | | | |
| Understand livestock | 1.2 | Identify best standard practice in livestock sanitation and hygiene | | | | | | |
| sanitary and hygiene | 1.3 | Identify equipment for livestock sanitation and hygiene. | | | | | | |
| LO 2: | 2.1 | Describe proper waste management | | | | | | |
| Understand | 2.2 | Recognize adequate space and comfort | | | | | | |
| animal housing and environment | 2.3 | Clean and dry living condition | | | | | | |
| LO 3: | 3.1 | Carryout proper handling/restraints | | | | | | |
| Understand | 3.2 | Perform monitoring for disease | | | | | | |
| animal health | 3.3 | Provide regular vetenary care: | | | | | | |
| and hygiene | | Checkup | | | | | | |
| | | VaccinationParasite control | | | | | | |
| L O 4: | 4.1 | Use clean and fresh water for feeding | | | | | | |
| Know feed and | 4.2 | Carryout feed storage and handling | | | | | | |
| water hygiene | 4.3 | Carryout feed quality control | | | | | | |
| LO 5: | 5.1 | Identify cleaning and disinfection equipment | | | | | | |
| Know farm | 5.2 | Carryout regular cleaning and disinfection | | | | | | |
| sanitation and | 5.3 | Carryout proper disposal of dead livestock | | | | | | |
| disinfection | 5.4 | Perform pest and rodents control | | | | | | |
| | | | | | | | | |
| LO 6: | 6.1 | Use PPE for personnel hygiene | | | | | | |
| Know personnel hygiene and bio- | 6.2 | Observe hygiene (hand washing after handling animal or working in the area) | | | | | | |
| security | 6.3 | Carryout bio-security protocol. | | | | | | |
| | | | | | | | | |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date |

UNIT 06: Operation of Chemical Fertilizer and Manure Application Equipment

| Unit Reference Number: | AGR/AEO/L2/06 |
|-------------------------------|---------------|
| Level: | 2 |
| Credit Value: | 3 |
| Guided Learning Hours: | 30 |

Unit Purpose:

This unit is designed to provide the learner with knowledge and skills for the operation of Chemical fertilizers and Manure application equipment

Objectives:

At the end of this unit, the learner should be able to:

- 1. Recognize equipment for application of chemical fertilizer and manure.
- 2. Carryout application of chemical fertilizer using a broadcaster.
- 3. Carryout application of manure using a spreader.

Unit assessment requirements/ evidence requirements:

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

- 1. Direct Observation/Oral questions (DO).
- 2. Question and Answer (QA).
- 3. Personal Statement (PS)
- 4. Witness Testimony (WT)

UNIT 06: Operation of Chemical Fertilizer and Manure Application Equipment

| LEARNING OBJECTIVE (LO) The learner will: | | PERFORMANCE CRITERIA The learner can: | ide pe | nce | | iden f. Pa | |
|---|-------------|---|-----------|-----|--|---------------|--|
| LO 1: | 1.1 | Distinguish between the different equipment | | | | | |
| Recognize | T .T | for applying chemical fertilizers and manure. | | | | | |
| equipment for | 1.2 | Explain the functions of different equipment | | | | | |
| application of | 1.2 | for applying chemical fertilizers and manure. | | | | | |
| chemical | 1.3 | Select appropriate equipment for chemical | | | | | |
| fertilizer and | 1.5 | fertilizer and manure application | | | | | |
| manure. | 1.4 | Use appropriate PPE in chemical fertilizer | | | | | |
| | 1.7 | and manure application | | | | | |
| LO 2: | 2.1 | Identify a broadcaster | | | | | |
| Carryout | 2.2 | Couple the broadcaster to the 3-point linkage | | | | | |
| application of | | of a tractor | | | | | |
| chemical | 2.3 | Load the broadcaster with fertilizer | | | | | |
| fertilizer using a | 2.4 | Couple the drive to the Power Take-Off (PTO) | | | | | |
| broadcaster | | shaft of the tractor. | | | | | |
| | 2.5 | Operate broadcaster to apply chemical | | | | | |
| | | fertilizer. | | | | | |
| | 2.6 | Demonstrate health and safety in chemical | | | | | |
| | | fertilizer application | | | | | |
| LO 3: | 3.1 | Identify a manure spreader | | | | | |
| Carryout | 3.2 | Couple the spreader to 3-point linkage. | | | | | |
| application of | 3.3 | Break manure into fragments using a beater. | | | | | |
| manure using a | 3.4 | Load the manure into the trailer. | | | | | |
| spreader. | 3.5 | Select appropriate speed for the operation of | | | | | |
| | | the spreader | | | | | |
| | 3.6 | Broadcast the manure using the mechanical | | | | T | |
| | | manure spreader. | | | | | |
| | 3.7 | Demonstrate health and safety in manure | | | | | |
| | | application | | | | | |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date |

UNIT 07: Operation of Crop Protection Equipment

| Level: | 2 |
|-------------------------------|----|
| Credit Value: | 3 |
| Guided Learning Hours: | 30 |

Unit Purpose:

This unit is design to provide the learner with knowledge and skills for the operation of Crop Protection Equipment

Objectives:

At the end of this unit, the learner should be able to:

- 1. Understand crop protection equipment operation.
- 2. Recognize crop protection Equipment
- 3. Carry out crop protection operation

Unit assessment requirements/ evidence requirements:

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

- 1. Direct Observation/Oral questions (DO).
- 2. Question and Answer (QA).
- 3. Personal Statement (PS)
- 4. Witness Testimony (WT)

UNIT 07: Operation of Crop Protection Equipment

| LEARNING OBJECTIVE (LO) | | PERFORMANCE CRITERIA | vide vpe | nce | | Ev Re No | ice Pagi | 9 |
|---|-----|--|-----------------|-----|--|----------------|-------------|---|
| The learner will: | | The learner can: | | | | | | |
| LO 1: Understand crop | 1.1 | Identify the personal protective equipment (PPE) for crop protection operation | | | | | | |
| protection equipment | 1.2 | Use the personal protective equipment (PPE) for crop protection operation | | | | | | |
| operation. | 1.3 | Discuss environmental concerns during crop protection operation: • wind direction, • weather etc. | | | | | | _ |
| | 1.4 | Describe common types of chemicals use in crop protection practices | | | | | | |
| | 1.5 | Identify types of agro-chemicals based on time of application: | | | | | | |
| | 1.6 | Identify types of agro-chemicals based on mode of action | | | | | | |
| LO 2: | 2.1 | Identify the crop protection equipment. | | | | | | |
| Recognize crop | 2.2 | Describe the function of sprayers | | | | | | |
| protection | 2.3 | Identify the different types of sprayers: | | | | | | |
| Equipment | 2.4 | Explain the working principles of common types of sprayers. | | | | | | |
| LO 3: | 3.1 | Select appropriate chemical for selected crops | | | | | | |
| | 3.2 | Assemble/couple the spraying equipment | | | | | | |
| Carry out crop protection operation | 3.3 | Mix the chemicals for crop protection according to manufacturer's instruction as available on the label. | | | | | | |
| | 3.4 | Carry out application of crop protection chemicals on plants. | | | | | | |
| | 3.5 | Dismantle equipment after use for cleaning | | | | | | |
| | 3.6 | Clean the equipment after operation. | | | | | | |
| | 3.7 | Demonstrate health and safety when carrying | | | | | | |
| | | out the crop protection operation. | | | | | | |
| | 3.8 | Store and secure equipment after usage. | | | | | | |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date |

UNIT 08: Operation of Crop Processing and Storage Equipment

| Unit Reference Number: AGR/AEO/L2/08 | | | | | | |
|--------------------------------------|---|--|--|--|--|--|
| Level: | 2 | | | | | |
| Credit Value: | 3 | | | | | |

Guided Learning Hours: 30

Unit Purpose:

This unit is design to provides the learner with knowledge and skills for operating crop processing and storage equipment

Objectives:

At the end of this unit, the learner should be able to:

- 1. Recognize different crop processing equipment
- 2. Perform processing operation on farm crops.
- 3. Recognize storage
- 4. Carry out Storage of crop

Unit assessment requirements/ evidence requirements:

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

development is carried out.

- 1. Direct Observation/Oral questions (DO).
- 2. Question and Answer (QA).
- 3. Personal Statement (PS)
- 4. Witness Testimony (WT)

UNIT 08: Operation of Crop Processing and Storage Equipment

| LEARNING OBJECTIVE (LO) | | PERFORMANCE CRITERIA | | Evidence Type | | | | ce Page |
|----------------------------|-----|--|--|------------------|--|--|--|------------|
| The learner will: | | The learner can: | | | | | | |
| LO 1: | 1.1 | Identify types of processing methods | | | | | | |
| Recognize | 1.2 | Identify common crop processing equipment | | | | | | |
| different crop | 1.3 | Select the equipment appropriately for | | | | | | |
| processing equipment | | processes in 1.1 above | | | | | | |
| LO 2: | 2.1 | Identify crop for processing | | | | | | |
| Perform processing | 2.2 | Identify processing methods for different crops. | | | | | | |
| operation on | 2.3 | Select processing equipment. | | | | | | |
| farm crops. | 2.4 | Carry out a processing operation for specific | | | | | | |
| | | food crop | | | | | | |
| | 2.5 | Demonstrate health and safety in carrying | | | | | | |
| | | out processing operations | | | | | | |
| LO 3: | 3.1 | Recognize types of storage facilities and | | | | | | |
| Recognize | | equipment. | | | | | | |
| storage facilities | 3.2 | | | | | | | |
| /equipment | 3.3 | Identify factors affecting safe storage | | | | | | |
| | 3.4 | Describe methods of safe storage | | | | | | |
| | | considering health and safety. | | | | | | |
| LO 4: | 4.1 | Identify Crop for storage | | | | | | |
| Carry out Storage | 4.2 | Measure the moisture content using small | | | | | | |
| of crop | | tool like moisture meter | | | | | | |
| | 4.3 | Determine if moisture content is appropriate | | | | | | |
| | 4.4 | Select appropriate structure for crop storage | | | | | | |
| | 4.5 | Carry out storage of crop considering health | | | | | | |
| | | and safety | | | | | | |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date |

UNIT 09: Operation of Harvesting Equipment

Unit Reference Number: AGR/AEO/L2/09

Level: 2

Credit Value: 4

Guided Learning Hours: 40

Unit Purpose:

This unit is design to provide the learner with knowledge and skills for operating harvesters **Objectives:**

At the end of this unit, the learner should be able to:

- 1. Understand the working principles of harvesters
- 2. Understand operation of harvesters.
- 3. Perform harvesting operations of grains.
- 4. Carry out forage harvesting.
- 5. Carry out Threshing / shelling Operation.

Unit assessment requirements/ evidence requirements:

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

- 1. Direct Observation/Oral questions (DO).
- 2. Question and Answer (QA).
- 3. Personal Statement (PS)
- 4. Witness Testimony (WT)

UNIT 09: Operation of Harvesting Equipment

| LEARNING OBJECTIVE (LO) | | PERFORMANCE CRITERIA The learner can: | | Evidence Type | | | Evideı Ref. No. | | nce Paş | | |
|-------------------------------|-----|--|--|------------------|--|--|-----------------------|---|------------|--|--|
| The learner will: | | | | | | | | | | | |
| LO 1: | 1.1 | Identify types of harvesting Equipment | | | | | | | | | |
| Understand the working | 1.2 | Describe functional components of harvesting Equipment. | | | | | | | | | |
| principles of harvesting | 1.3 | Explain the working principles for different harvesting Equipment. | | | | | | | | | |
| Equipment. | 1.4 | Describe the challenges associated with working principles of operations in 1.3 above | | | | | | | | | |
| LO 2: | 2.1 | Describe the operations of a forage harvester. | | | | | | | | | |
| Understand | 2.2 | Describe the operations of a grain harvester. | | | | | | | | | |
| operation of | 2.3 | Carry out adjustments of forage harvester | | | | | | | | | |
| harvesters. | 2.4 | Perform adjustments of grain harvester | | | | | | | | | |
| | 2.5 | Distinguish between operation and adjustment procedures of harvesters. | | | | | | | | | |
| LO 3: | 3.1 | Recognize the maturity stage of the crop | | | | | | | | | |
| Perform | 3.2 | Differentiate between maturity and ripeness | | | | | | | | | |
| harvesting operations of | 3.3 | Identify the appropriate equipment for harvesting the crop | | | | | | | | | |
| grains | 3.4 | Recognize the appropriate moisture content and related conditions before carrying out the harvesting operation | | | | | | | | | |
| | 3.5 | Select the harvesting equipment to match the planting techniques of the crop | | | | | | | | | |
| | 3.6 | Carryout the harvesting operation. | | | | | | | | | |
| LO 4: Carry out forage | 4.1 | Determine the maturity of the grass for the operation | | | | | | | | | |
| harvesting | 4.2 | Identify the specific tools and equipment for the operation | | | | | | | | | |
| | 4.3 | Select the tools and equipment for the operation | | | | | | | | | |
| | 4.4 | Perform the forage harvesting operation for hay production | | | | | | | | | |
| LO 5: | 5.1 | Recognize the thresher/sheller type to | | | | | | | | | |
| Carry out | | perform the operation based on crop | | | | | | | | | |
| Threshing / | 5.2 | Identify the proper moisture content of the | | | | | Ī | Ī | Ī | | |
| shelling | | crop to be threshed/shelled | | | | | | | | | |
| Operation | 5.3 | Select the equipment for the operation | | | | | | | | | |
| | 5.4 | Perform minor adjustments on sheller/thresher | | | | | | | | | |
| | 5.5 | Perform threshing/shelling operation | | | | | | | | | |

| | 5.6 | Bag appro | and opriatel | Store v | the | threshed | crop | | | | | |
|-------------------|--------|--------------|-----------------|------------|-----|----------|------|--|-----|-----|--|--|
| | | | | , | | | | | | | | |
| Learner's Signatu | re: | | | | | | | | Dat | :e: | | |
| | | | | | | | | | | | | |
| Assessor's Signat | ure: | | | | | | | | Da | te: | | |
| | _ | | | | | | | | | | | |
| IQAM Signature (i | f sam | pled) | | | | | | | Da | te: | | |
| | | | | | | | | | | | | |
| EQAM Signature (| if sam | pled) | | | | | | | Da | te | | |
| | | | | | | | | | | | | |

UNIT 10: Operation of Livestock Mechanization Equipment

| Unit Reference Number: AGR/AEO/L2/10 |
|--------------------------------------|
| Level: 2 |
| Credit Value: 4 |
| Guided Learning Hours: 40 |

Unit Purpose:

This unit is design to provide learners with the knowledge and skills of feeding and milking operation in livestock industry.

Objectives:

At the end of this unit, the learner should be able to:

- 1. Recognize livestock feeding equipment
- 2. Use of feeding equipment
- 3. Recognize milking equipment
- 4. Carry out Milking operation

Unit assessment requirements/ evidence requirements:

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

- 1. Direct Observation/Oral questions (DO).
- 2. Question and Answer (QA).
- 3. Personal Statement (PS)
- 4. Witness Testimony (WT)

UNIT 10: Operation of Livestock Mechanization Equipment

| LEARNING OBJECTIVE (LO) | | PERFORMANCE CRITERIA | Evidence Type | | | R | ence Page | |
|-------------------------------|-----|--|------------------|--|--|---|------------------|--|
| The learner will: | | The learner can: | | | | | | |
| LO 1: | 1.1 | Identify different feeding systems | | | | | | |
| Recognize | 1.2 | Identify different feeding equipment | | | | | | |
| livestock | 1.3 | Distinguish the different methods of feeding | | | | | | |
| feeding | | livestock | | | | | | |
| equipment | 1.4 | Identify different handling equipment for | | | | | | |
| | | livestock | | | | | | |
| LO 2: | 2.1 | Recognize the feed materials. | | | | | | |
| Use of feeding | 2.2 | Recognize equipment suitable for feeding | | | | | | |
| equipment | | livestock. | | | | | | |
| | 2.3 | Perform conveyance of livestock feed | | | | | | |
| | 2.4 | Demonstrate safe handling of livestock feed | | | | | | |
| LO 3: | 3.1 | Identify types of milking methods | | | | | | |
| Recognize | 3.2 | List the different milking equipment | | | | | | |
| milking | 3.3 | Identify Pasteurization methods | | | | | | |
| equipment | 3.4 | Identify equipment for pasteurization | | | | | | |
| | 3.5 | Explain pasteurization process | | | | | | |
| | 3.6 | Demonstrate health and safety in handling | | | | | | |
| | | milking equipment | | | | | | |
| L O 4: | 4.1 | Select animal for Milking | | | | | | |
| Carry out | 4,2 | Select milking method | | | | | | |
| Milking | 4.3 | Carry Out Milking | | | | | | |
| operation | 4.4 | Covey milk for storage and post milking | | | | | | |
| | | operation | | | | | | |
| | 4.5 | Demonstrate health and safety in conveying | | | | | | |
| | | milk and storage | | | | | | |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date |

UNIT 11: Operation of Planting and Transplanting Equipment

| Level: | 2 |
|-------------------------------|----|
| Credit Value: | 3 |
| Guided Learning Hours: | 30 |

Unit Purpose:

This unit is designed to provide learner with knowledge and skills of planting and transplanting using

farm equipment

Objectives:

At the end of this unit, the learner should be able to:

- 1. Recognize various planting/transplanting equipment and their functions
- 2. Calibrate seed drill/planter.
- 3. Perform planting operation using a tractor mounted seed drill/planter
- 4. Perform planting operation with a directly mounted seed drill/planter

Unit assessment requirements/ evidence requirements:

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

- 1. Direct Observation/Oral questions (DO).
- 2. Question and Answer (QA).
- 3. Personal Statement (PS)
- 4. Witness Testimony (WT)

UNIT 11: Operation of Planting and Transplanting Equipment

| LEARNING OBJECTIVE (LO) | | PERFORMANCE CRITERIA | | Evidence Type | | | | | | | f. | nce Pag | |
|----------------------------|-----|--|--|------------------|---|---|-------|--|--------|--|----|------------|--|
| The learner will: | | The learner can: | | 1 | 1 | 1 | T | | | | | | |
| LO 1: | 1.1 | Discuss environmental conditions favorable for | | | | | | | | | | | |
| Recognize various | | successful planting/transplanting | | | | | | | | | | | |
| planting/transplanting | 1.2 | Explain the agronomic practices required for | | | | | | | | | | | |
| equipment and their | | planting and transplanting | | | | | | | | | | | |
| functions | 1.3 | Identify the various planting equipment | | | | | | | | | | | |
| | 1.4 | Identify the various manual transplanting | | | | | | | | | | | |
| | | equipment | | | | | | | | | | | |
| | 1.5 | Explain the functions of various | | | | | | | | | | | |
| | | planting/transplanting equipment. | | | | | | | | | | | |
| | 1.6 | Distinguish between planting and transplanting | | | | | | | | | | | |
| | | operations | | | | | | | | | | | |
| LO 2: | 2.1 | List the types of seed drills/planter | | | | | | | | | | | |
| Calibrate seed | 2.2 | Identify essential components of seed | | | | | | | | | | | |
| drill/planter. | | drills/planter | | | | | | | | | | | |
| | 2.3 | Explain the operations in seed drill/planter | | | | | | | | | | | |
| | 2.4 | Perform the lifting of the drive-wheel with a jack | | | | | | | | | | | |
| | 2.5 | Carry out loading of the seeds into the hopper | | | | | | | | | | | |
| | 2.6 | Determine one revolution of the seed plate by | | | | | | | | | | | |
| | | marking the wheel | | | | | | | | | | | |
| | 2.7 | Determine the seed delivery in one revolution | | | | | | | | | | | |
| | | turn of the wheel | | | | | | | | | | | |
| | 2.8 | Measure the quantity of seed delivered in one | | | | | | | | | | | |
| | | revolution by counting | | | | | | | | | | | |
| | 2,9 | Measure the quantity of seed delivered in one | | | | | | | | | | | |
| | | revolution to determine quantity of seed to be | | | | | | | | | | | |
| | | planted per hectare | | | | | | | | | | | |
| LO 3: | 3.1 | Mount the seed drill/planter using the 3-point | | | | | | | | | | | |
| Perform planting | | linkage | | | | | | | | | | | |
| operation using a | 3.2 | Adjust the seed drill/planter appropriately | | | | | | | | | | | |
| tractor mounted seed | 3.3 | Carryout planting operation with a directly | | | 1 | | | | | | | | |
| drill/planter. | | mounted seed drill/planter | | | | | | | | | | | |
| LO 4: | 4.1 | Couple the seed drill/planter directly to the | | | 1 | | | | \neg | | | | |
| Perform planting | | tractor | | | | | | | | | | | |
| operation with a | 4.2 | Adjust the seed drill/planter appropriately | | | 1 | | | | \neg | | | | |
| directly mounted | 4.3 | Carryout planting operation with a directly | | | 1 | | | | \neg | | | | |
| seed drill/planter | | mounted seed drill/planter | | | | | | | | | | | |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date |

NATIONAL SKILLS QUALIFICATION

AGRICULTURAL EQUIPMENT OPERATION

LEVEL 3

FEBRUARY, 2025

NATIONAL OCCUPATIONAL STANDARDS AGRICULTURAL IMPLEMENTS MECHANICS LEVEL 3

GENERAL INFORMATION

QUALIFICATION PURPOSE

This qualification is designed to produce a trainee who should be able to exhibit skills and knowledge necessary to operate land clearing and development equipment farm waste handling and management Equipment. The Learner should be able to demonstrate skills and competence required in operating, land clearing and development equipment farm waste handling and management related equipment.

QUALIFICATION OBJECTIVES

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

- Operate land clearing and development equipment
- Operate land reclamation equipment
- Operate Farm Wastes Handling equipment.
- Carryout treatment, storage and utilization of farm waste
- Observe health and safety of work place.
- Demonstrate Communication and Interpersonal Skills
- Demonstrate Team Work in Agricultural Equipment Operation

| S/No | Reference Number | NOS Title | Credit | Guided |
|-------|------------------|---|--------|----------|
| | | | Value | Learning |
| | | | | Hours |
| 1 | AGR/AEO/L3/01 | Operation of Land clearing and development equipment | 8 | 80 |
| 2 | AGR/AEO/L3/02 | Operation of land reclamation equipment | 8 | 80 |
| 3 | AGR/AEO/L3/03 | Operation of Farm Wastes Handling equipment | 8 | 80 |
| 4 | AGR/AEO/L3/04 | Farm Wastes Management | 8 | 80 |
| 5 | AGR/AEO/L3/06 | Occupational Health and Safety | 2 | 20 |
| 6 | AGR /AEO/L3/05 | Communication and Interpersonal Skills | 2 | 20 |
| 7 | AGR/AEO/L3/07 | Team Work in Agricultural Equipment Operation | 1 | 10 |
| Total | | | 37 | 370 |

Mandatory Units

NOTE: This is a 37-credit unit qualification. To achieve this qualification; Learners are required to achieve all credits units in the mandatory units.. 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% – 150% of the GLH. The actual Total Learning Hours for each Credit will then be a minimum of 15 hours.

Unit 01: Operation of Land Clearing and Development Equipment

| Unit Reference Number: AGR/AEO/L3 | /01 |
|-----------------------------------|-----|
| Level: | 3 |
| Credit Value: | 8 |
| Guided Learning Hours: | 80 |

Unit Purpose:

This unit is designed to provide the learner with knowledge and skills to operate land clearing and development equipment

Objectives:

At the end of this unit, the learner should be able to:

- 1. Understand Land clearing and development equipment
- 2. Understand procedures for land Clearing
- 3. Understand procedures for land Development
- 4. Carryout land clearing
- 5. Carryout land Development of land.

Unit assessment requirements/ evidence requirements:

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

- 1. Direct Observation/Oral questions (DO).
- 2. Question and Answer (QA).
- 3. Work Products (WP).
- 4. Professional Discussion (PD)
- 5. Witness Statement (WS)
- 6. Personal Statement (PS)

UNIT 01: Operation of Land Clearing and Development Equipment

| LEARNING OBJECTIVE | | PERFORMANCE CRITERIA | | Evidence Type | | | | | | | | | | vidence ef. Page | | |
|----------------------------|------------|---|---|------------------|--|----------|----|----|--|--|--|--|--|---------------------|--|--|
| (LO) | | | | | | | No | D. | | | | | | | | |
| | | The learner can: | | | | | | | | | | | | | | |
| The learner | | | | | | | | | | | | | | | | |
| will: LO 1: | 1 1 | Evaluin land clearing methods | | | | | | | | | | | | | | |
| Understand | 1.1 | Explain land clearing methods | | | | | _ | | | | | | | | | |
| Land clearing | 1.2 | Identify equipment for land clearing and development | | | | | | | | | | | | | | |
| and | 1.3 | Describe land clearing and development | | | | | | | | | | | | | | |
| development | 1.5 | equipment and their uses | | | | | | | | | | | | | | |
| equipment | 1.4 | Recognize factors for selecting land | | | | | | | | | | | | | | |
| | | development practices | | | | | | | | | | | | | | |
| | 1.5 | Recognize factors for selecting land | | | | | | | | | | | | | | |
| | | development equipment | | | | | | | | | | | | | | |
| | 1.6 | Demonstrate the functions and adaptability | | | | | | | | | | | | | | |
| | | of land development equipment | | | | | | | | | | | | | | |
| LO 2: | 2.1 | Explain vegetation removal | | | | | | | | | | | | | | |
| Understand | 2.2 | Explain debris removal | | | | | | | | | | | | | | |
| procedures for | 2.3 | Explain land grading and leveling | | | | | | | | | | | | | | |
| land Clearing | 2.4 | Explain stump and root removal | | | | | | | | | | | | | | |
| | 2.5 | Explain burning and chemical treatment | | | | | | | | | | | | | | |
| LO 3: | 3.1 | Identify the different land tenure systems | | | | | | | | | | | | | | |
| Understand | 3.2 | Identify land survey equipment | | | | | | | | | | | | | | |
| procedures for | 3.3 | Interpret farm map | | | | | | | | | | | | | | |
| land | 3.4 | Interpret soil test result | | | | | | | | | | | | | | |
| Development. | 3.5 | Install irrigation system. | | | | | _ | | | | | | | | | |
| | 3.6 | Install drainage system | | | | | | | | | | | | | | |
| LO 4: | 4.1 | Carryout vegetation removal | | | | | | | | | | | | | | |
| Carryout land clearing | 4.2 | Carryout debris removal | | | | | | | | | | | | | | |
| clearing | 4.3 | Carryout land grading and leveling | | | | | | | | | | | | | | |
| | 4.4 | Carryout stump and root removal | | | | | | | | | | | | | | |
| | 4.5 | Carryout burning and chemical treatment | | | | | | | | | | | | | | |
| LO 5: | 5.1 | Select the appropriate equipment for land | | | | | | | | | | | | | | |
| Carryout Development of | <u>Б</u> О | development. | - | | | | | | | | | | | | | |
| land. | 5.2 5.3 | Perform pre-operation check on equipment Carryout land development on a cleared land | | | | \vdash | | | | | | | | | | |
| lanu. | 5.5 | canyour tand development on a cleared land | | | | | | | | | | | | | | |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date |

Unit 02: Operation of Land Reclamation Equipment

| Unit Reference Number: AGR/AEO/L3 | s/02 |
|-----------------------------------|------|
| Level: | 3 |
| Credit Value: | 8 |
| Guided Learning Hours: | 80 |

Unit Purpose:

This unit is designed to provide the learner with knowledge and skills to operate land reclamation equipment

Objectives:

At the end of this unit, the learner should be able to:

- 1. Understand Land Reclamation
- 2. Know factors to considered in land Reclamation
- 3. Know land reclamation equipment

Unit assessment requirements/ evidence requirements:

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

- 1. Direct Observation/Oral questions (DO).
- 2. Question and Answer (QA).
- 3. Work Products (WP).
- 4. Professional Discussion (PD)
- 5. Witness Statement (WS)
- 6. Personal Statement (PS)

| LEARNING OBJECTIVE | | PERFORMANCE CRITERIA Evidence Type | | | | | Re | ef. | nce Pag | e |
|------------------------------|-----|--|--|--|--|--|----|-----|------------|---|
| (LO) The learner will: | | The learner can: | | | | | No |). | | |
| LO 1: | 1.1 | Explain physical reclamation practices | | | | | | | | |
| Understand | 1.2 | Discuss soil reclamation | | | | | | | | |
| Land Reclamation | 1.3 | Explain agroforestry and afforestation | | | | | | | | |
| LO 2: Know factors to | 2.1 | Explain factors for selecting reclamation equipment/practice | | | | | | | | |
| consider in land | 2.2 | Discuss social factors in land reclamation | | | | | | | | |
| Reclamation | 2.3 | Discuss economic factors land reclamation | | | | | | | | |
| LO 3: | 3.1 | Identify equipment for land reclamation | | | | | | | | |
| Know land | 3.2 | Describe land reclamation equipment | | | | | | | | |
| reclamation equipment | 3.3 | Select equipment based on: Type and size of equipment Technological advancement Energy efficiency | | | | | | | | |
| | 3.4 | Identify the equipment to be used for land reclamation | | | | | | | | |
| | 3.5 | Carryout land reclamation on a degraded land | | | | | | | | |

UNIT 02: Operation of Land Reclamation Equipment

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date |

Unit 03: Operation of Farm Waste Handling Equipment

| Unit Reference Number: AGR/AEO/L3/03 | | | | | | | |
|--------------------------------------|----|--|--|--|--|--|--|
| Level: | 3 | | | | | | |
| Credit Value: | 8 | | | | | | |
| Guided Learning Hours: | 80 | | | | | | |

Unit Purpose: This unit is designed to provide the learner with knowledge and skills to operate farm waste handling equipment

Objectives:

At the end of this unit, the learner should be able to:

- 1. Understand farm waste
- 2. Understand management of farm waste
- 3. Know the farm waste Handling equipment
- 4. Know farm waste disposal methods

Unit assessment requirements/ evidence requirements:

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

- 1. Direct Observation/Oral questions (DO).
- 2. Question and Answer (QA).
- 3. Work Products (WP).
- 4. Professional Discussion (PD)
- 5. Witness Statement (WS)
- 6. Personal Statement (PS)

UNIT 03: Operation of Farm Waste Handling Equipment

| LEARNING OBJECTIVE (LO) | | | | Evidence Type | | | | | | | | R | nce Page | ē |
|-------------------------------|-----|---|---|------------------|--|--|--|--|--|--|--|---|-----------------|---|
| The learner will: | | | | | | | | | | | | | | |
| LO 1: | 1.1 | Explain organic waste in the farm | | | | | | | | | | | | |
| Understand | 1.2 | Explain inorganic waste in the farm | | | | | | | | | | | | |
| farm waste | 1.3 | Explain hazardous waste | | | | | | | | | | | | |
| | 1.4 | Discuss the waste legislation and regulations | | | | | | | | | | | | |
| | | in your work environment. | | | | | | | | | | | | |
| LO 2: | 2.1 | Explain composting | | | | | | | | | | | | |
| Understand | 2.2 | Explain aerobic and anaerobic digestion | | | | | | | | | | | | |
| management of | 2.3 | Describe recycling of farm waste | | | | | | | | | | | | |
| farm waste | 2.4 | Discuss proper disposal of farm waste | | | | | | | | | | | | |
| LO 3: | 3.1 | Identify equipment of farm waste handling | | | | | | | | | | | | |
| Know the farm | 3.2 | Select farm waste transportation handling | | | | | | | | | | | | |
| waste Handling | | equipment | | | | | | | | | | | | |
| equipment | 3.3 | Couple farm waste equipment | | | | | | | | | | | | |
| LO 4: | 4.1 | Carryout farm waste gathering/collection | 1 | | | | | | | | | | | |
| Know farm | 4.2 | Transport farm waste | | | | | | | | | | | | |
| waste disposal | 4.3 | Dispose farm waste considering health and | | | | | | | | | | | | |
| methods | | safety | | | | | | | | | | | | |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date |

UNIT 04: Farm Waste Management

| Unit Reference Number: | AGR/AEO/L3/04 |
|------------------------|---------------|
| Level: | 3 |
| Credit Value: | 8 |
| Guided Learning Hours: | 80 |

Unit Purpose:

This unit is designed to provide the learner with knowledge and skills of treatment, storage and utilization of farm waste

Objectives:

At the end of this unit, the learner should be able to:

- 1. Understand farm Waste Management Practices
- 2. Identify the equipment used for farm waste storage
- 3. Recognize the equipment used for waste treatment/upgrading
- 4. Identify the equipment used for farm waste utilization

Unit assessment requirements/ evidence requirements:

Assessment must be carried out management of farm wastes handling equipment in real workplace environment in which learning and human development is carried out.

- 1. Direct Observation/Oral questions (DO).
- 2. Question and Answer (QA).
- 3. Work Products (WP).
- 4. Professional Discussion (PD)
- 5. Witness Statement (WS)
- 6. Personal Statement (PS

Unit 04: Farm Wastes Management

| | | PERFORMANCE CRITERIA | Evidence Type | | | | | nce | |
|-----------------------|-----|--|------------------|--|--|--|----|-----|----------|
| OBJECTIVE (LO) | | | | | | | Re | | Page |
| The learner will: | | The learner can: | | | | | | • | |
| LO 1: | 1.1 | Identify Waste management practices | | | | | | | |
| Understand farm | 1.2 | Discuss the health implications of different | | | | | | | |
| Waste | | farm waste management practice | | | | | | | |
| Management | 1.3 | Identify the uses/application of the stated farm | | | | | | | |
| Practices | | waste practices | | | | | | | |
| | 1.4 | List the equipment used for farm waste | | | | | | | |
| | | collection | | | | | | | |
| | 1.5 | Identify the uses/application of farm waste | | | | | | | |
| | | collection equipment | | | | | | | |
| | 1.6 | Carryout maintenance of farm waste collection | | | | | | | |
| | | equipment | | | | | | | |
| LO 2: Identify the | 2.1 | Recognize the equipment used for farm waste | | | | | | | |
| equipment used | | storage | | | | | | | |
| for farm waste | 2.2 | Identify the uses/application of the farm waste | | | | | | | |
| storage | | storage equipment | | | | | | | |
| | 2.3 | Explain the methods of selecting appropriate | | | | | | | |
| | | farm waste storage equipment | | | | | | | |
| | 2.4 | Explain the working principles of the farm | | | | | | | |
| | | waste storage equipment | | | | | | | |
| LO 3: Recognize | 3.1 | Explain the equipment used for farm waste | | | | | | | |
| the equipment | | treatment/ upgrading | | | | | | | |
| used for waste | 3.2 | Identify the uses/application of the farm waste | | | | | | | |
| treatment/ | | treatment/ upgrading equipment | | | | | | | |
| upgrading | 3.3 | Explain the methods of selecting appropriate | | | | | | | |
| | | farm waste treatment / upgrading equipment | | | | | | | |
| | 3.4 | Explain the working principles of the farm | | | | | | | |
| | | waste treatment/ upgrading equipment | | | | | | | |
| LO 4: | 4.1 | Explain the equipment used for farm waste | | | | | | | |
| Identify the | | utilization (hauled waste spreaders, soil waste | | | | | | | |
| equipment used | | injectors, pumped waste spreaders, biogas | | | | | | | |
| for farm waste | 1.0 | production equipment, etc.) | | | | | | | <u> </u> |
| utilization | 4.2 | Identify the uses/application of the stated farm | | | | | | | |
| | 4.0 | waste utilization equipment | | | | | | | ├──┼── |
| | 4.3 | Select appropriate farm waste utilization | | | | | | | |
| | 4 4 | equipment | | | | | | | ├──┼── |
| | 4.4 | Explain the working principles of the farm | | | | | | | |
| | | waste utilization equipment | | | | | | | \vdash |
| | 4.5 | Carryout maintenance of farm waste utilization | | | | | | | |
| | 14 | equipment | | | | | | | \vdash |
| | 4.6 | Demonstrate health, safety and hygiene in | | | | | | | |
| | | waste disposal | | | | | | | |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date |

UNIT 05: Occupational Health and Safety

| Unit Reference Number: AGR/AEO/L3/05 | | | | | | | |
|--------------------------------------|----|--|--|--|--|--|--|
| Level: | 2 | | | | | | |
| Credit Value: | 2 | | | | | | |
| Guided Learning Hours: | 20 | | | | | | |

Unit Purpose: This unit specifies the competencies required to demonstrate safe work practices. It involves learning about workplace safety, correct use of signs and symbols, identifying and reducing risks of hazards in the work environment.

Objectives:

At the end of this unit, the learner should be able to:

- Demonstrate Safe working Practices and Instructions
- Understand Safety Hazards and risks
- Know how to take appropriate actions during accident/injury
- Demonstrate safe work habit and clean work environment

Unit assessment requirements/ evidence requirement

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

- 1. Direct Observation/oral questions (DO).
- 2. Question and Answer (QA).
- 3. Professional Discussion (PD).
- 4. Personal Statement (PS)
- 5. Examine Work Product
- 6. Witness Testimony (WT)

UNIT 05: Occupational Health and Safety

| LEARNING OBJECTIVE (LO) | | PERFORMANCE CRITERIA | | Evidence Type | | | ef. | nce Pag | je | |
|-----------------------------------|-----|--|--|------------------|--|--|-----|------------|----|---|
| The learner will: | | The learner can: | | | | | | | | |
| LO 1: Identify | 1.1 | Explain safety work practice and instructions. | | | | | | | | |
| the various safe | 1.2 | Explain safety signs and symbols. | | | | | | | | |
| working | 1.3 | Identify safety signs and symbols | | | | | | | | |
| Practices and Instructions | 1.4 | Describe how to work in accordance with health and safety best practices. | | | | | | | | |
| | | | | | | | | | | |
| LO 2: Recognize | 2.1 | Explain various work environment hazards. | | | | | | | | |
| Safety Hazards | 2.2 | Describe ways to reduce risk in workplace | | | | | | | | |
| and risks | 2.2 | Describe ways to avoid common workplace hazards | | | | | | | | |
| | | | | | | | | | | |
| LO 3: Understand the | 3.1 | Describe the safe access and exit routes in the work environment. | | | | | | | | |
| safe work habit and clean work | 3.2 | Explain safe work habit and clean work environment. | | | | | | | | |
| environment | 3.3 | Use proper Personnel Protective Equipment (PPE) at workplace | | | | | | | | |
| | 3.4 | Explain how to dispose all wastes appropriately to designated waste facilities | | | | | | | | |
| | | | | | | | | | | _ |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date |

UNIT 06: Communication and Interpersonal Skills

| Unit Reference Number: AGR/AEO/L3/06 | | | | | | | |
|--------------------------------------|----|--|--|--|--|--|--|
| Level: | 2 | | | | | | |
| Credit Value: | 2 | | | | | | |
| Guided Learning Hours: | 20 | | | | | | |

Unit Purpose: This unit specifies the competencies required to demonstrate good communication and interpersonal skills. It involves the ability to read and understand documented instructions and the ability to know how to communicate respectfully when in a bad mood or under pressure.

Objectives:

At the end of this unit, the learner should be able to:

- Understand the importance of good communication
- Demonstrate how to follow documented instructions
- Know how to create documented instructions

Unit assessment requirements/ evidence requirements:

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

- 1. Direct Observation/oral questions (DO).
- 2. Question and Answer (QA).
- 3. Professional Discussion (PD).
- 4. Personal Statement (PS)
- 5. Examine Work Product (WP)
- 6. Witness Testimony (WT)

| the concept of communication 1.2 [1.3 5 4 LO 2: 2.1 5 Understand i | The learner can: Define communication. Distinguish between the different types of | | | /idence Eviden /pe Ref. I No. | | |
|---|--|--|--|-------------------------------------|--|--|
| the concept of communication 1.2 [1.3 5 4 LO 2: 2.1 5 Understand i | | | | | | |
| communication 1.3 5 4 LO 2: 2.1 5 Understand i | Distinguish between the different types of | | | | | |
| LO 2: Understand | communication. | | | | | |
| Understand i | Select factors to be considered when using each method in 1.2. | | | | | |
| Understand i | | | | | | |
| | State the reasons for using signs and symbols in workshops, offices and public places. | | | | | |
| | Explain why good communication is important. | | | | | |
| | Draw signs and symbols commonly used in work spaces. | | | | | |
| | Interpret signs and symbols commonly used in work spaces. | | | | | |
| | | | | | | |
| Understand information from any given document. 3.2 i 3.3 S | Comprehend information from: - charts log books warning instructions manuals operation procedures, etc. State reasons for good understanding of information given in the documents in 3.1. State steps necessary when skipping through | | | | | |
| | bulky information manuals. | | | | | |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date |

UNIT 07: TEAM WORK

| Unit Reference Number: AGR/AEO/L3/07 | | | | | | | |
|--------------------------------------|----|--|--|--|--|--|--|
| Level: | 2 | | | | | | |
| Credit Value: | 1 | | | | | | |
| Guided Learning Hours: | 10 | | | | | | |

Unit Purpose: This unit is aimed to impact into the leaner, the necessary knowledge and skills required to develop team spirit and positive working relationship with the fellow operators in Agricultural Equipment Operation.

Objectives:

At the end of this unit, the learner should be able to:

- Develop positive working relationship with colleagues in the work environment
- Take responsibilities within the team
- Comply with policy and regulations of organization.

Unit assessment requirements/ evidence requirement

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

- 1. Direct Observation/Oral questions (DO).
- 2. Question and Answer (QA).
- 3. Witness Testimony (WT)
- 4. Personal Statement (PS)
- 5. Professional Discussion (PD)

UNIT 07: Team Work

| LEARNING OBJECTIVE (LO) | | PERFORMANCE CRITERIA Evidence Type | | | | ; | R | ence Pag | ţe |
|---------------------------------|-----|---|--|--|--|---|---|-----------------|----|
| The learner will: | | The learner can: | | | | | | | |
| LO 1: Understand | 1.1 | Define Team/Teamwork | | | | | | | |
| Teamwork in | 1.2 | State the benefit (s) of working as a Team | | | | | | | |
| Equipment Operation | 1.3 | State the challenges of Teamwork | | | | | | | |
| - | | | | | | | | | |
| LO 2: | 2.1 | Recognise the qualities of a good Leader, | | | | | | | |
| Understand | 2.2 | Explain the benefits of good Leadership | | | | | | | |
| Leadership in Teamwork | 2.3 | State the benefits of loyalty and confidentiality | | | | | | | |
| | | | | | | | | | |
| LO 3: Understand | 3.1 | Recognise the essence of good working relationship in a Team | | | | | | | |
| good working relationship | 3.2 | Explain the contributions of other Team members to ensure good health and social wellbeing in the workplace. | | | | | | | |
| in a Team | 3.3 | Identify strategies for good working relationship | | | | | | | |
| | 3.4 | Explain organizational code of conduct for own job and teamwork. | | | | | | | |
| | 3.5 | Report activities of the teamwork that may negatively affect organizational code of conduct to the appropriate authority. | | | | | | | |
| | | | | | | | | | |

| Learner's Signature: | Date: |
|-----------------------------|-------|
| Assessor's Signature: | Date: |
| IQAM Signature (if sampled) | Date: |
| EQAM Signature (if sampled) | Date |

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