REPUBLIC OF KENYA

NATIONAL OCCUPATIONAL STANDARDS

FOR

AGRICULTURAL ENGINEERING TECHNICIAN

LEVEL 6

PROGRAMME ISCED CODE: 0716 454 A

TVET CDACC
P.O. BOX 15745-00100
NAIROBI

CONSERVE AGRICULTURAL SOIL AND WATER

UNIT CODE: 0716 451 11A

TVET CDACC CODE: ENG/OS/AGR/CR/04/5/MA

UNIT DESCRIPTIONS

This unit specifies the competencies required by an Agricultural Engineering Technologist Level 6 to conserve agricultural soil and water. It involves designing, establishing and maintaining agricultural soil and water conservation structures.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the key outcomes which make up workplace function.	**PERFORMANCE CRITERIA** These are assessable statements which specify the required level of performance for each of the elements. ***Bold and italicized terms are elaborated in the Range.***
1. Design agricultural soil and water conservation structures	1.1 ***Agricultural soil and water conservation structures*** work drawings are prepared as per work requirements 1.2 Agricultural soil and water conservation structures design approvals are obtained as per work requirement 1.3 Agricultural soil and water conservation structures bill of quantities are prepared as per approved designs and drawings 1.4 Agricultural soil and water conservation structures material schedule is prepared based on design and drawings
2. Establish agricultural soil and water conservation structures	2.1 ***Personal protective equipment*** are worn based on OSHA 2.2 Agricultural soil and water conservation structures tools and equipment are assembled as per work requirements. 2.3 Agricultural soil and water conservation structures are established according to designs and working drawings
3. Maintain agricultural soil and water conservation engineering structures	3.1 Personal protective equipment are worn based on OSHA 3.2 Agricultural soil and water conservation structures maintenance schedule is prepared as per work requirements 3.3 Agricultural soil and water conservation structures maintenance tools and equipment are assembled as per work requirement.

	3.4 Agricultural soil and water conservation structures are maintained as per work requirement

RANGE

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

Variable	Range
1. Agricultural soil and water conservation structures may include but are not limited to:	• Terraces • Contours • Contour bunds • Mulch • Cut off drains • Retention ditches • Water ways • Check dams • Gabions
2. Personal protective equipment may include but are not limited to:	• Gloves • Helmet • gum boots • Overalls • Dust coat • Ear muffs • Face masks

REQUIRED KNOWLEDGE AND SKILLS

This section describes the knowledge and skills required for this unit of competency.

Required knowledge

The individual needs to demonstrate knowledge of:

- Field assessment procedures
- Different land condition
- Different soil and water conservation structures

- Occupational safety and health procedures

Required Skills

The individual needs to demonstrate the following skills:

- Logical thinking
- Problem solving
- Communication
- Analytical

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills range.

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Worn personal protective equipment based on OSHA 1.2 Prepared agricultural soil and water conservation structures work drawings as per work requirements 1.3 Prepared agricultural soil and water conservation structures bill of quantities as per approved designs and drawings 1.4 Prepared material schedule based on agricultural soil and water conservation structures design and drawings 1.5 Established agricultural soil and water conservation structures according to designs and working drawings 1.6 Maintained agricultural soil and water conservation structures as per work requirements
2. Resource implications	The following resources should be provided: 2.1 Appropriately simulated environment where assessment can take place 2.2 Access to relevant work environment 2.3 Resources relevant to the proposed activity or tasks

3. Methods of assessment	Competency in this unit may be assessed through: 3.1 Practicals 3.2 Projects 3.3 Portfolio of Evidence 3.4 Third Party Reports 3.5 Written tests 3.6 Oral assessment
4. Context of assessment	Competency may be assessed: 4.1 Workplace 4.2 Simulated work environment
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector and workplace job role is recommended.