

## FARM IRRIGATION AND DRAINAGE SYSTEMS OPERATION

**ISCED UNIT CODE:** 0811 351 05A

**TVET CDACC UNIT CODE:** HO/CU/HP/CR/01/4/MA

**Unit duration:** 60 Hours

### Relationship to Occupational Standards

This unit addresses the Unit of Competency: **Operate farm irrigation and drainage systems**

### Unit Description

This unit specifies the competencies required to apply inorganic and organic chemistry. It involves applying physical chemistry principles, inorganic and organic chemistry concepts.

### Summary of Learning Outcomes

SNO	Learning Outcome	Duration (Hours)
1.	Select designs farm irrigation and drainage systems	15
2.	Install farm irrigation and drainage systems	30
3.	Maintain farm irrigation and drainage systems	15
	<b>TOTAL</b>	<b>60</b>

### Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcomes	Content	Suggested Assessment Methods
1. Select Design of farm irrigation and drainage systems	<b>Theory</b> 1.1 Designing of farm irrigation and drainage system 1.1.1 Definition of terms 1.1.1.1 Irrigation 1.1.1.2 Surface	<ul style="list-style-type: none"><li>• Practicals</li><li>• Written tests</li><li>• Projects</li><li>• Interviews/ Oral questions</li><li>• Individual/group</li></ul>

	<p>1.1.1.3 Sprinkler</p> <p>1.1.1.4 Pivot</p> <p>1.1.2 Importance of farm irrigation and drainage system</p> <p>1.1.3 Types of farm irrigation and drainage system</p> <p>1.1.3.1 Surface</p> <p>1.1.3.2 Sub surface</p> <p>1.1.3.3 Sprinkler</p> <p>1.1.3.4 Trickle</p> <p>1.1.3.5 Centre pivot</p> <p>1.2 Factors considered when selecting designs of farm irrigation and drainage system</p> <p>1.3 Preparation of drainage system materials</p> <p><b>Practice</b></p> <p>1.4 Prepare drainage system materials</p>	<p>assignments</p> <ul style="list-style-type: none"> <li>• Third party report</li> </ul>
2. Install farm irrigation and drainage systems	<p><b>Theory</b></p> <p>2.1 Installation of farm irrigation and drainage system</p> <p>2.1.1 Importance of farm irrigation and drainage system tools and equipment</p> <p>2.1.2 Types of farm irrigation and drainage system tools and equipment</p> <p>2.1.2.1 Drip kit</p> <p>2.1.2.2 Pipes</p> <p>2.1.2.3 Fittings</p> <p>2.1.2.4 Water meter</p> <p>2.1.2.5 Flow meters</p> <p>2.1.2.6 Pumps</p>	<ul style="list-style-type: none"> <li>• Practicals</li> <li>• Written tests</li> <li>• Projects</li> <li>• Interviews/ Oral questions</li> <li>• Individual/group assignments</li> <li>• Third party report</li> </ul>

	<p>2.2 Testing of farm irrigation and drainage system</p> <p>2.3 Maintenance of farm irrigation and drainage system tools and equipment</p> <p><b>Practice</b></p> <p>2.4 Install farm irrigation and drainage system tools and equipment</p> <p>2.5 Test farm irrigation and drainage system tools and equipment</p> <p>2.6 Maintain farm irrigation and drainage system tools and equipment</p>	
3. Maintain farm irrigation and drainage systems	<p><b>Theory</b></p> <p>3.1 Maintenance of Farm Irrigation &amp; Drainage Systems</p> <p>3.2 Preparation of farm irrigation and drainage system</p> <p>3.3 Assembling of farm irrigation and drainage system</p> <p>3.4 Maintaining farm irrigation and drainage system</p> <p><b>Practice</b></p> <p>1.4 Prepare farm irrigation and drainage system</p> <p>1.5 Assemble farm irrigation and drainage system</p> <p><b>1.6 Maintain farm irrigation and drainage system</b></p>	<ul style="list-style-type: none"> <li>• Practicals</li> <li>• Written tests</li> <li>• Projects</li> <li>• Interviews/ Oral questions</li> <li>• Individual/group assignments</li> <li>• Third party report</li> </ul>

### Suggested Methods of Instruction

- Demonstration
- Role playing
- Experiment
- Group discussion
- Direct instruction

- Question & answer

### **Recommended Resources for 25 trainees**

<b>General Resources</b>	<b>Tools and Equipment</b>	<b>Materials and Supplies</b>
10 Drip kit		Flashcards
10 Pipes		Flip charts
10 Fittings	25 Measuring tapes	2 packets of assorted colors of whiteboard marker pens
10 Water meter	25 Panga	Printing papers
10 Flow meters	5 Drip kit	
10 Pumps	1 roll Pipes (100m)	
10 Sprinkler	Fittings	
Source of water	1 Water meter	
Gutters	1 Flow meter	
	1 Pump	