

## FARM IRRIGATION AND DRAINAGE SYSTEMS OPERATION

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

**TVETCDACC 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

### 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 1.1.1.3 Sprinkler 1.1.1.4 Pivot 1.1.2 Importance of farm irrigation and drainage system 1.1.3 Types of farm irrigation and drainage system	<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>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>	
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> <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>	<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>
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>	<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>

	1.5 Assemble farm irrigation and drainage system <b>1.6</b> Maintain farm irrigation and drainage system	
--	---	--

### Suggested Methods of Instruction

- Demonstration
- Role playing
- Experiment
- Group discussion
- Direct instruction
- Question & answer

### Recommended Resources for 25 trainees

General Resources	Tools and Equipment	Materials and Supplies
• 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	