

Irrigation & Water Management

1. Overview

The purpose of this programme is to equip participants with the knowledge and practical skills required to operate and maintain irrigation systems, monitor and maintain water quality, and safely use and care for agricultural tools and equipment. Participants will also develop foundational numeracy, map reading, and hydroponic production skills required in modern agricultural environments. The programme promotes sustainable water management practices that contribute to efficient crop production and environmental conservation.

2. Programme Outcome:

- Operate irrigation systems according to established procedures
- Perform routine maintenance on irrigation systems and equipment
- Identify factors that influence crop growth under irrigation
- Monitor and maintain basic water quality for agricultural production
- Apply sustainable water management practices
- Select, use, maintain and store hand tools and agricultural equipment safely
- Demonstrate an understanding of the numbering system and perform basic mathematical calculations
- Read, interpret and draw maps to identify routes, locations and directions
- Perform routine operations within a hydroponic production environment under supervision
- Apply safe working practices and environmental responsibility in agricultural operations

Qualification:

Certificate of Completion

Duration:

3-Months

Programme Type:

Category B – Workplace-Based Learning Programme

Programme ID:

PA0933

SAQA US:

116202, 116168, 116167, 14084, 7461, 116148

NQF Level:

1

Credits:

14

Entry Requirements:

Basic literacy & Numeracy skills

Training Options:

Online - Each participant will receive access to an online portal, where all programme materials and resources are available. Training is delivered fully online, and participants will join scheduled Microsoft Teams sessions facilitated by a trainer. This mode provides flexibility and allows learners to participate from any location.

Blended - Blended learning combines both online and face-to-face training. Participants receive access to an online portal for online content, resources, and self-paced activities. They also attend scheduled in-person contact sessions with a facilitator, either at the client's premises or providers campus. This approach offers the flexibility of online learning with the added support of guided, interactive sessions.

Face-to-Face - Each participant will receive training resources, which contains all programme materials and resources. Training is delivered through onsite contact sessions, either at the client's premises or providers campus, where a facilitator conducts the sessions in a classroom environment.

Minimum Participants Required: (1) Online, (1) Blended & (1) Face-to-Face

3. Programme Content

- **(116202 US):** Operate and maintain irrigation systems
- **(116168 US):** Maintain basic water quality
- **(116167 US):** Select, use and care for hand tools and basic equipment and infrastructure
- **(14084 US):** Demonstrate an understanding of and use the numbering system
- **(7461 US):** Use maps to access and communicate information concerning routes, location and direction
- **(116148 US):** Perform basic routine operations in a defined hydroponic context

4. Topics

Module 1: Irrigation Systems and Operations

- Introduction to irrigation systems
- Types of irrigation systems
- Components of irrigation equipment
- Operating irrigation systems
- Factors affecting irrigation efficiency
- Crop water requirements
- Irrigation scheduling

Module 2: Irrigation System Maintenance

- Routine inspection of irrigation systems
- Preventative maintenance
- Identifying common faults
- Cleaning irrigation equipment
- Repair and replacement of basic components
- Safe operation of irrigation equipment

We trust that the above is in order and look forward to hearing from you for Implementation

Module 3: Water Quality Management

- Importance of water quality in agriculture
- Water quality indicators
- Monitoring water quality
- Factors affecting water quality
- Sustainable water use practices
- Environmental protection and water conservation

Module 4: Agricultural Tools and Equipment

- Selecting appropriate hand tools
- Safe use of agricultural equipment
- Care and maintenance of tools
- Storage of tools and equipment
- Basic farm infrastructure
- Occupational health and safety practices

Module 5: Numeracy for Agriculture

- Understanding the numbering system
- Counting and estimating quantities
- Fractions, decimals and percentages
- Basic calculations for irrigation and agriculture
- Mathematical symbols and terminology
- Recording numerical information

Module 6: Maps and Direction

- Introduction to maps
- Reading and interpreting maps
- Measuring distances
- Understanding scale
- Identifying locations and directions
- Drawing simple maps

Module 7: Basic Hydroponic Operations

- Introduction to hydroponic production
- Hydroponic systems and equipment
- Routine hydroponic operations
- Monitoring nutrient and water systems
- Plant care in hydroponic production
- Hygiene and safety practices

We trust that the above is in order and look forward to hearing from you for Implementation

5. Assessments

This programme includes a Portfolio of Evidence (POE) that must be submitted at the end of the programme. The POE include:

- **Knowledge Assessments:** To evaluate theoretical understanding
- **Practical Assignments:** Hands-on tasks related to course topics
- **Workplace Assignments and Logbook:** Application of skills in real-world settings

Successful participants will receive a certificate of completion.

6. Workplace-Based Learning Programme

This WLP is a fusion of academic learning and practical work. The learning is directly applied to the workplace by using client-based mentors and extensive workplace-based portfolio work and assignments. Apart from the obvious benefits of a workplace directed qualification, each WLP qualifies for recognition as a Category B Skills Programme in the Learning Matrix of the Amended BEE codes, which allows for the salaries of participants to be recognized as part of the Skills Development Expenditure.

We trust that the above is in order and look forward to hearing from you for Implementation