



*Training Course:
Irrigation Water Management*

*10 - 21 May 2026
Beirut (Lebanon)*

Training Course: Irrigation Water Management

Training Course code: SC236448 From: 10 - 21 May 2026 Venue: Beirut (Lebanon) - Training Course Fees: € Euro

Introduction

This training program on Irrigation Water Management is designed by Global Horizon Training Center to equip participants with advanced knowledge and practical skills in efficient water use for agricultural and landscape irrigation systems. The program focuses on modern irrigation techniques, water resource optimization, system design principles, and sustainable water management practices to improve productivity while conserving water resources. It combines theoretical foundations with applied field practices and real-world case studies.

Objectives

By the end of this training program, participants will be able to:

- Understand the principles of irrigation water management and hydrological cycles
- Analyze crop water requirements and irrigation scheduling techniques
- Design and evaluate efficient irrigation systems
- Apply water-saving technologies and modern irrigation methods
- Reduce water losses and improve irrigation efficiency
- Use data and tools for irrigation planning and decision-making
- Promote sustainable and climate-resilient agricultural water use

Course Methodology

The program will be delivered using a blended and interactive approach, including:

- Instructor-led theoretical sessions
- Practical workshops and group exercises
- Real-life case studies and field examples
- Simulation of irrigation system planning
- Data analysis and irrigation scheduling exercises
- Group discussions and problem-solving activities

- Assessments and daily feedback sessions

Organizational Impact

Upon completion of the program, organizations will benefit from:

- Improved efficiency in water resource utilization
- Reduced operational costs related to irrigation
- Enhanced agricultural productivity and yield quality
- Better planning and management of water systems
- Strengthened sustainability and environmental compliance
- Increased technical capacity of staff in irrigation management

Target Audience

- Agricultural engineers and technicians
- Irrigation system designers and consultants
- Farm managers and agronomists
- Water resource management professionals
- Government and NGO agricultural project staff
- Environmental and sustainability officers
- Students and graduates in agricultural sciences

Outlines

Day 1: Fundamentals of Irrigation Water Management

- Introduction to water resources and hydrological cycle
- Importance of irrigation in agriculture
- Types of irrigation systems overview
- Key concepts: evapotranspiration, infiltration, runoff
- Challenges in global and local water management

Day 2: Soil-Water-Plant Relationship

- Soil physical properties affecting water retention
- Field capacity, wilting point, and available water
- Plant water uptake mechanisms
- Root zone dynamics
- Practical analysis of soil moisture conditions

Day 3: Crop Water Requirements

- Calculation of crop evapotranspiration E_Tc
- Reference evapotranspiration E_{To} concepts
- Crop coefficients K_c
- Seasonal water demand estimation
- Case study: water requirement for key crops

Day 4: Irrigation Scheduling Techniques

- Principles of irrigation scheduling
- Fixed vs. dynamic scheduling methods
- Soil moisture-based scheduling
- Climate-based scheduling
- Hands-on irrigation scheduling exercises

Day 5: Irrigation System Types and Design Principles

- Surface irrigation systems
- Sprinkler irrigation systems
- Drip irrigation systems
- System selection criteria
- Efficiency comparison among systems

Day 6: Drip and Micro-Irrigation Systems

- Components of drip irrigation systems
- Design considerations and layout planning
- Emitters, filters, and pressure regulators
- Maintenance and clogging prevention
- Efficiency optimization techniques

Day 7: Sprinkler and Pressurized Systems

- Sprinkler system components and operation
- Hydraulic principles in pressurized systems
- Uniformity of water distribution
- System design and spacing calculations
- Field application and limitations

Day 8: Irrigation Water Management and Efficiency

- Water use efficiency indicators
- Losses in irrigation systems
- Leakage and evaporation control
- Scheduling optimization techniques
- Water conservation strategies

Day 9: Irrigation Planning and Data Analysis

- Use of meteorological and climate data
- Irrigation system planning methodologies
- GIS and remote sensing in irrigation overview
- Data-driven decision-making
- Practical planning exercise

Day 10: Sustainable Irrigation and Final Project

- Climate change impacts on irrigation
- Sustainable water management strategies
- Smart irrigation technologies
- Final group project presentation
- Program review and evaluation

Registration form on the Training Course: Irrigation Water Management

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Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

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3 Oudai street, Aldouki,
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