Training Course on Climate Change and Water Resources Management

Professional Development Training Course Outline

Category	Climate Change	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Introduction

Climate change is reshaping hydrological cycles, altering precipitation patterns, and intensifying the frequency and severity of droughts and floods. These dynamics pose serious risks to water availability, quality, and ecosystem sustainability. Training Course on Climate Change and Water Resources Management equips participants with the skills and knowledge to understand, evaluate, and respond to the impacts of climate change on water resources. Using practical tools, GIS applications, case studies, and participatory approaches, learners will explore climate-water interactions and integrated water resources management (IWRM) strategies.

The course emphasizes climate-resilient planning, adaptive water governance, hydrological modeling, and early warning systems. Through this hands-on training, participants will learn to integrate climate risk assessments into water projects, apply nature-based solutions, and leverage policy frameworks to ensure sustainable, inclusive, and climate-smart water management. It is tailored for professionals involved in policy, water planning, agriculture, urban development, and disaster risk reduction.

Programme Curriculum

Training Course on Climate Change and Water Resources Management

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Course Objectives

Understand the nexus between climate change and water scarcity.

Analyze hydrological impacts of global warming and extreme weather.

Interpret climate data for water resource planning.

Apply GIS and remote sensing in water risk mapping.

Assess climate vulnerability of watersheds and basins.

Develop climate-resilient water management strategies.

Incorporate IWRM principles in project planning.

Evaluate green infrastructure and nature-based solutions.

Strengthen community resilience and water security.

Promote adaptive water governance frameworks.

Use hydrological modeling tools for scenario analysis.

Design early warning and disaster preparedness systems.

Advocate for climate-smart water policies and financing mechanisms.

Organizational Benefits

1. Increased capacity to manage **climate-induced water stress**.
2. Improved water governance through **data-informed decisions**.
3. Integration of **resilience strategies into water projects**.

4. Better compliance with **SDG 6 (Clean Water)** and SDG 13 (Climate Action).
5. Enhanced stakeholder engagement in **IWRM planning**.
6. Access to **cutting-edge water modeling tools**.
7. Stronger institutional capacity for **climate adaptation financing**.
8. Empowerment of staff to handle **hydro-climatic disasters**.
9. Improved **community water management initiatives**.
10. Sustainable infrastructure planning with **ecosystem-based approaches**.

Target Participants

Water Resource Planners & Engineers
Environmental Scientists & Hydrologists
Climate Change Experts
Policy Makers & Government Agencies
NGO Staff in WASH and Climate Programs
Urban Planners and Developers
Disaster Risk Reduction Officers
Agricultural Extension Officers
Academics and Researchers
Graduate Students in Environmental Sciences

Course Outline

Module 1: Fundamentals of Climate Change and Hydrological Systems

1. Climate science basics and global warming trends
2. Greenhouse gas emissions and hydrological impacts
3. Climate models and scenario planning
4. Climate change indicators in water systems
5. **Case Study:** Effects of El Niño on East African river basins

Module 2: Climate Change Impacts on Water Availability and Quality

1. Altered rainfall patterns and drought intensification
2. Flood risk and surface water variability
3. Groundwater recharge and salinity issues
4. Waterborne diseases and ecosystem disruption
5. **Case Study:** Cape Town’s “Day Zero” water crisis

Module 3: Integrated Water Resources Management (IWRM) Under Climate Stress

1. Principles and components of IWRM
2. Stakeholder roles in water governance
3. Balancing competing water demands
4. Conflict management in transboundary water settings
5. **Case Study:** Nile Basin Initiative’s IWRM approach

Module 4: GIS and Remote Sensing for Climate-Water Analysis

1. Introduction to GIS for water resource mapping
2. Satellite data for precipitation and water balance
3. Drought and flood monitoring with remote sensing
4. Watershed delineation and spatial analysis
5. **Case Study:** Mapping flood-prone areas in Bangladesh

Module 5: Climate Vulnerability and Risk Assessment

1. Tools for vulnerability and risk mapping
2. Exposure, sensitivity, and adaptive capacity
3. Community-based vulnerability assessments
4. Prioritization of hotspots for intervention
5. **Case Study:** Climate risk maps for Kenya's arid lands

Module 6: Climate-Resilient Water Infrastructure and Nature-Based Solutions

1. Designing green and blue infrastructure
2. Wetlands, reforestation, and ecosystem restoration
3. Rainwater harvesting and aquifer recharge
4. Urban stormwater management systems
5. **Case Study:** Sponge City Initiative in China

Module 7: Adaptive Water Governance and Policy

1. Legal and policy frameworks for climate-water integration
2. Institutional coordination and public participation
3. Financing climate-resilient water projects
4. Gender equity and water governance
5. **Case Study:** Water governance reforms in South Africa

Module 8: Early Warning Systems and Disaster Preparedness

1. Hydrological forecasting and alert systems
2. Drought and flood risk mitigation strategies
3. Community-based disaster preparedness
4. Integrating traditional and modern knowledge
5. **Case Study:** Early warning systems in Bangladesh’s flood zones

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally-recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

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