Stormwater Management Training Course

Professional Development Training Course Outline

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

Course Introduction

Stormwater Management has become a critical component of climate resilience, sustainable urban development, green infrastructure planning, and water resource protection. With increasing challenges from urban flooding, extreme weather events, rapid urbanization, and climate change impacts, organizations worldwide are adopting advanced stormwater control measures, low impact development (LID), sustainable drainage systems (SuDS), and nature-based solutions. Stormwater Management Training Course is designed to equip professionals with practical knowledge and technical skills in stormwater planning, flood risk reduction, drainage system design, watershed management, runoff control, and environmental sustainability strategies.

This professional training program provides a complete understanding of modern stormwater management frameworks, hydraulic modeling approaches, green infrastructure technologies, regulatory compliance, and smart water management solutions. Participants will explore global best practices, innovative tools, and real-world applications through industry case studies focused on urban flood mitigation, resilient infrastructure development, water quality improvement, and sustainable stormwater governance. The course supports engineers, planners, environmental professionals, and decision-makers in developing effective solutions for future-ready cities and communities.

Programme Curriculum

Stormwater Management Training Course

Introduction

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Course Duration

5 days

Course Objectives

By the end of this Stormwater Management Training Course, participants will be able to:

1. Understand advanced principles of stormwater management, urban hydrology, and watershed sustainability.
2. Develop strategies for climate-resilient stormwater infrastructure and flood risk management.
3. Apply modern green infrastructure and nature-based stormwater solutions.
4. Design effective stormwater drainage systems and runoff control mechanisms.
5. Analyze rainfall patterns, catchment behavior, and hydrological modeling techniques.
6. Implement Low Impact Development (LID) and Sustainable Drainage Systems (SuDS) approaches.
7. Evaluate stormwater impacts on water quality, ecosystems, and urban environments.
8. Utilize digital technologies including GIS mapping, remote sensing, and smart water analytics.
9. Improve understanding of stormwater regulations, environmental standards, and compliance requirements.
10. Apply best practices for flood prevention, resilience planning, and emergency response.
11. Develop integrated approaches for urban planning and sustainable water management.
12. Analyze global stormwater management case studies and successful implementation models.
13. Create effective stormwater management plans for sustainable cities and infrastructure projects.

Target Audience

1. Civil Engineers and Drainage Engineers
2. Environmental Engineers and Water Resource Specialists
3. Urban Planners and Infrastructure Developers
4. Government Authorities and Municipal Officers
5. Construction Project Managers and Consultants
6. Environmental Compliance Professionals
7. Architects and Sustainable Development Professionals
8. Researchers, Academics, and Water Management Experts

Course Modules

Module 1: Fundamentals of Stormwater Management

- Principles of **stormwater hydrology and urban drainage systems**

- Stormwater generation, runoff processes, and watershed behavior
- Impacts of urbanization on natural water cycles
- Overview of global stormwater management challenges
- Introduction to sustainable stormwater frameworks
- **Case Study: Singapore ABC Waters Programme**

Module 2: Urban Flood Risk Management and Climate Adaptation

- Understanding urban flooding causes and impacts
- Climate change effects on rainfall intensity and drainage capacity
- Flood risk assessment and mitigation planning
- Resilient infrastructure development strategies
- Emergency stormwater response planning
- **Case Study: Copenhagen Cloudburst Management Plan**

Module 3: Sustainable Drainage Systems (SuDS)

- Principles and applications of Sustainable Drainage Systems
- Green roofs, rain gardens, wetlands, and detention systems
- Stormwater attenuation and infiltration techniques
- Environmental benefits of SuDS implementation
- Designing sustainable urban drainage networks
- **Case Study: United Kingdom SuDS Implementation Projects**

Module 4: Green Infrastructure and Nature-Based Solutions

- Role of green infrastructure in stormwater control
- Permeable pavements and bioswales
- Urban forests and ecosystem-based solutions
- Water-sensitive urban design principles
- Enhancing climate resilience through natural systems
- **Case Study: New York City Green Infrastructure Program**

Module 5: Stormwater Modeling, GIS, and Digital Technologies

- Introduction to hydrological and hydraulic modeling
- GIS applications in stormwater planning
- Rainfall-runoff simulation techniques
- Smart sensors and real-time monitoring systems
- Data-driven stormwater management strategies
- **Case Study: Los Angeles Stormwater Digital Management Initiatives**

Module 6: Stormwater Quality Management and Pollution Control

- Sources of stormwater pollution
- Best Management Practices (BMPs)
- Sediment and contaminant control methods
- Industrial and urban runoff management
- Protecting rivers, lakes, and coastal ecosystems
- **Case Study: Chesapeake Bay Stormwater Management Program**

Module 7: Stormwater Infrastructure Design and Maintenance

- Design principles for drainage infrastructure
- Culverts, channels, detention ponds, and retention systems
- Asset management and inspection programs
- Maintenance strategies for long-term performance
- Infrastructure lifecycle planning
- **Case Study: Rotterdam Water Plaza Projects**

Module 8: Integrated Stormwater Governance and Future Trends

- Stormwater policies and regulatory frameworks
- Public-private collaboration models
- Sustainable urban water management planning
- Emerging trends in smart cities and climate resilience
- Future innovations in stormwater technology
- **Case Study: Melbourne Water Sensitive City Strategy**

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

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