Utility Infrastructure Engineering 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

Utility Infrastructure Engineering is a rapidly evolving discipline that focuses on the planning, design, construction, operation, maintenance, and modernization of essential infrastructure systems including water supply, wastewater, stormwater drainage, power distribution, gas networks, telecommunications, district energy, and smart utility systems. With the increasing demand for sustainable infrastructure, smart cities, digital transformation, asset management, resilient utility networks, GIS mapping, BIM integration, renewable energy infrastructure, and climate-resilient engineering, professionals require advanced technical knowledge and practical skills to successfully deliver complex infrastructure projects. Utility Infrastructure Engineering Training Course equips participants with modern engineering approaches, international standards, innovative technologies, and best practices for developing efficient and reliable utility infrastructure systems.

The course emphasizes practical applications through real-world case studies, engineering simulations, project-based learning, and industry best practices. Participants will gain expertise in utility planning, risk management, asset lifecycle management, SCADA systems, IoT-enabled infrastructure, digital twins, construction management, sustainability frameworks, ESG compliance, and predictive maintenance. By integrating technical engineering principles with emerging digital technologies, this program prepares engineers, project managers, planners, consultants, and utility professionals to design resilient, cost-effective, and future-ready utility infrastructure capable of supporting growing urban and industrial development.

Programme Curriculum

Utility Infrastructure Engineering Training Course

Introduction

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Course Duration

5 days

Course Objectives

Upon completion of this training, participants will be able to:

1. Understand modern Utility Infrastructure Engineering principles and global best practices.
2. Design sustainable water, wastewater, and stormwater infrastructure systems.
3. Apply Building Information Modeling (BIM) in utility engineering projects.
4. Utilize GIS and Geospatial Technologies for utility asset mapping and planning.
5. Implement Smart Utility Networks using IoT and digital technologies.
6. Develop effective Asset Management Strategies aligned with ISO 55000.
7. Perform comprehensive Risk Assessment and Infrastructure Resilience Planning.
8. Integrate SCADA Systems for monitoring and operational efficiency.
9. Improve Project Management using PMBOK and Agile methodologies.
10. Apply Climate-Resilient Infrastructure design principles.
11. Enhance Construction Quality Assurance and Safety Management practices.
12. Optimize Infrastructure Lifecycle Cost Analysis and predictive maintenance.
13. Develop future-ready Digital Twin and Smart City Utility Solutions.

Target Audience

1. Utility Infrastructure Engineers
2. Civil Engineers
3. Mechanical Engineers
4. Electrical Engineers
5. Water and Wastewater Engineers
6. Project Managers and Construction Managers
7. Urban Planners and Infrastructure Consultants
8. Government, Municipal, and Utility Authority Professionals

Course Modules

Module 1: Fundamentals of Utility Infrastructure Engineering

- Principles of utility infrastructure systems
- Utility planning and network development
- Engineering standards and international codes
- Utility lifecycle management
- **Case Study:** Planning an integrated urban utility corridor

Module 2: Water Supply and Wastewater Infrastructure

- Water distribution network design
- Wastewater collection systems
- Stormwater management
- Hydraulic modeling and network optimization
- **Case Study:** Smart water distribution system implementation

Module 3: Power, Gas, and Telecommunications Infrastructure

- Electrical utility distribution systems
- Gas transmission and distribution networks
- Fiber optic and telecom infrastructure
- Utility coordination and conflict management
- **Case Study:** Multi-utility corridor development

Module 4: GIS, BIM, and Digital Engineering

- GIS for utility mapping
- Building Information Modeling (BIM)
- Digital Twin technology
- Utility asset databases
- **Case Study:** BIM implementation for utility infrastructure projects

Module 5: Smart Utilities and Emerging Technologies

- Internet of Things (IoT)
- SCADA systems
- Artificial Intelligence applications
- Predictive maintenance technologies
- **Case Study:** Smart city utility management platform

Module 6: Asset Management and Infrastructure Maintenance

- ISO 55000 asset management framework
- Infrastructure condition assessment
- Maintenance planning
- Lifecycle cost optimization
- **Case Study:** Utility asset management improvement program

Module 7: Project Management, Risk, and Sustainability

- Infrastructure project management

- Risk assessment techniques
- ESG and sustainability principles
- Climate resilience strategies
- **Case Study:** Managing risks in major infrastructure projects

Module 8: Future Trends and Innovation in Utility Engineering

- Renewable utility infrastructure
- Green infrastructure solutions
- Smart cities integration
- Future utility technologies
- **Case Study:** Digital transformation of a metropolitan utility network

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:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com