Smart Public Infrastructure Training Course

Professional Development Training Course Outline

Category	Architectural Engineering	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Smart Public Infrastructure Training Course is designed to equip professionals with cutting-edge skills in smart cities development, IoT-enabled infrastructure, AI-driven urban systems, and digital governance frameworks. As governments and urban planners worldwide accelerate toward sustainable cities, digital transformation, and resilient infrastructure ecosystems, this course provides a deep dive into how technology is reshaping public infrastructure planning, management, and optimization. Participants will gain hands-on exposure to smart mobility systems, intelligent transport networks, smart utilities, GIS mapping, and data-driven decision-making models that are redefining urban living standards globally.

This training integrates emerging technologies such as Artificial Intelligence (AI), Internet of Things (IoT), Big Data Analytics, Digital Twin Technology, 5G infrastructure, and cloud-based smart governance platforms. It is designed for professionals seeking expertise in urban innovation, infrastructure modernization, ESG compliance, climate-smart development, and digital public service delivery. By the end of the program, learners will be capable of designing, analyzing, and managing next-generation infrastructure systems that are efficient, sustainable, and citizen-centric.

Programme Curriculum

Smart Public Infrastructure Training Course

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Course Duration

10 days

Course Objectives

1. Understand Smart City Ecosystems & Digital Infrastructure Frameworks
2. Apply IoT in Urban Infrastructure Monitoring & Automation
3. Implement AI-driven Predictive Maintenance in Public Assets
4. Design Sustainable and Climate-Resilient Infrastructure Systems
5. Develop Smart Transportation and Intelligent Mobility Solutions
6. Integrate GIS and Spatial Data Analytics in Urban Planning
7. Explore Digital Twin Technology for Infrastructure Simulation
8. Enhance Cybersecurity in Smart Public Infrastructure Systems
9. Apply Big Data Analytics for Urban Decision-Making
10. Optimize Energy-Efficient Smart Grid and Utility Systems
11. Understand 5G and Edge Computing in Smart Infrastructure
12. Improve Public Service Delivery through E-Governance Platforms
13. Master ESG Compliance and Sustainable Urban Development Metrics

Target Audience

- Urban Planners & City Development Officers
- Civil Engineers & Infrastructure Consultants
- Government Policy Makers & Public Administrators
- Smart City Project Managers
- ICT & IoT Solution Architects
- Environmental & Sustainability Experts
- Data Analysts in Urban Systems
- Students & Researchers in Urban Technology Fields

Course Modules

Module 1: Foundations of Smart Public Infrastructure

- Smart city evolution overview
- Infrastructure digitization concepts
- Public sector innovation models
- Global urban transformation trends
- Smart governance frameworks
- **Case Study:** Singapore Smart Nation Initiative

Module 2: IoT in Urban Infrastructure

- IoT architecture in cities
- Sensor networks for monitoring
- Real-time infrastructure tracking
- Smart utilities automation
- IoT data integration systems
- **Case Study:** Barcelona Smart Lighting System

Module 3: Artificial Intelligence in Infrastructure

- AI predictive analytics models
- Infrastructure failure prediction
- Automated decision systems
- Machine learning in asset management
- AI-enabled urban optimization
- **Case Study:** Amsterdam Traffic AI System

Module 4: Smart Transportation Systems

- Intelligent traffic management
- Autonomous transport systems
- Mobility-as-a-Service (MaaS)
- Smart ticketing platforms
- Urban congestion control
- **Case Study:** London Intelligent Transport Network

Module 5: GIS & Urban Spatial Analytics

- Geographic data mapping
- Urban growth modeling
- Land use optimization
- Disaster risk mapping
- Spatial intelligence tools
- **Case Study:** New York City GIS Planning System

Module 6: Digital Twin Technology

- Virtual city modeling
- Infrastructure simulation systems
- Real-time digital replicas
- Predictive urban analytics
- Scenario-based planning
- **Case Study:** Dubai Digital Twin City Model

Module 7: Smart Energy & Utility Systems

- Smart grid infrastructure
- Renewable energy integration
- Energy monitoring systems
- Demand-response technologies
- Utility automation platforms

- **Case Study:** California Smart Grid Project

Module 8: Cybersecurity in Smart Infrastructure

- Cyber risk assessment
- Critical infrastructure protection
- Data encryption systems
- Network security protocols
- Threat intelligence frameworks
- **Case Study:** UK National Grid Cybersecurity Upgrade

Module 9: Big Data in Urban Systems

- Urban data lakes
- Predictive analytics models
- Real-time data processing
- Decision intelligence systems
- Citizen data insights
- **Case Study:** Seoul Smart Data Hub

Module 10: 5G & Edge Computing

- High-speed connectivity frameworks
- Edge data processing systems
- Low-latency communication networks
- Smart sensor integration
- Infrastructure connectivity upgrades
- **Case Study:** South Korea 5G Smart City Rollout

Module 11: Smart Water Management Systems

- IoT water monitoring
- Leak detection systems
- Water quality analytics
- Smart irrigation systems
- Resource optimization models
- **Case Study:** Cape Town Water Management System

Module 12: Smart Waste Management

- Automated waste collection
- Sensor-based bins
- Route optimization systems
- Recycling intelligence systems
- Environmental impact tracking
- **Case Study:** Stockholm Smart Waste System

Module 13: E-Governance & Digital Public Services

- Digital citizen platforms
- Online service delivery systems
- Government data portals

- Paperless administration
- Citizen engagement tools
- **Case Study:** Estonia e-Governance Model

Module 14: Sustainable Urban Development

- Green infrastructure planning
- Carbon footprint reduction
- Climate adaptation strategies
- ESG integration frameworks
- Smart environmental monitoring
- **Case Study:** Copenhagen Carbon Neutral Plan

Module 15: Smart Infrastructure Project Management

- Agile infrastructure delivery
- Risk and cost management
- Stakeholder coordination models
- Smart project tracking systems
- Performance evaluation metrics
- **Case Study:** Masdar City Smart Development Project

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	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

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

Register Online Now

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