COURSE BROCHURE

Smart Cities and the Internet of Things

A course explaining to municipal and utility officials how smart city services are built on IoT: sensors, networks and platforms, applications in mobility, water and energy, and data governance.

Code	HT-AI-114
Category	AI & Digital Transformation
Duration	1 week
Level	Intermediate
City	Dubai

Introduction

Cities across the region are investing in smart meters, connected street lighting and adaptive traffic systems, yet many of these projects remain isolated solutions that never share data. A smart city starts from residents' needs and the service, and only then selects the technology.

Objectives

- Explain the components and domains of a smart city and the frameworks used to measure its performance
- Describe the IoT architecture layers from devices and gateways to platform and applications
- Select the right connectivity technology for each urban application against clear technical criteria
- Assess interoperability, cybersecurity and resident privacy requirements in projects
- Prepare an outline business case and delivery model for a smart city initiative

Who should attend

- Municipal officials and urban planning authority staff
- Engineers and managers in water, electricity and transport utilities
- IT and digital transformation managers in government entities
- Real estate developers and infrastructure contractors

Skills you will develop

- Designing an IoT solution architecture for a municipal service
- Comparing low-power wide-area networks
- Defining smart city performance indicators
- Writing technical requirements for procurement documents

Learning Outcomes

- Draw an architecture diagram for a use case showing sensors, connectivity, platform and data flow
- Justify the choice of LoRaWAN, NB-IoT or fiber for a given application
- Identify security and privacy risks in an urban project and set controls to reduce them
- Write a feasibility summary for an initiative covering benefits, costs and indicators

Course Outline

Day 1: The Smart City Concept and Frameworks

- Smart city domains: mobility, energy, water, waste, public safety and digital services
- City indicators in ISO 37120 and ISO 37122 as a measurement reference
- Governance models and roles of the municipality, utilities, operators and private partners

Day 2: IoT Architecture and Connectivity

- The sensing layer: sensor and meter types, gateways and edge computing
- Connectivity options: LoRaWAN, NB-IoT, LTE-M, 5G and fiber, compared by range, power and bandwidth
- MQTT and CoAP messaging protocols, device management platforms and remote updates

Day 3: Urban Applications

- Smart mobility: adaptive traffic signals, smart parking and real-time public transport information
- Smart utilities: advanced metering infrastructure, leak detection in water networks and connected street lighting
- Waste management with bin fill-level sensors, air quality monitoring and building management systems

Day 4: Data, Platforms and Security

- The city data platform, urban operations center, open data and APIs
- The city digital twin and its integration with GIS
- IoT security: device identity, network segmentation and protection of residents' personal data

Day 5: Planning, Funding and Delivery

- The business case and funding models, including public-private partnership
- Procurement, avoiding vendor lock-in and moving from pilot to scale
- Applied project in which each team designs a use case for a residential district covering architecture, connectivity, data flow and KPIs

Training methodology

Presentations illustrated with urban projects from cities in the region
Comparison exercise selecting connectivity for three different applications
Security and privacy risk workshop on a street camera and sensor project
Final use-case design project presented to the group

Certification

Participants receive a Harbor Training Center certificate of attendance on completing the course.

Upcoming dates

City	Dates	Language	Fee
Dubai	21 – 25 June 2027	AR	EUR 4,800

Fees are per participant.

Contact us

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https://harbor4training.com/en/courses/smart-cities-iot