IoT Data Integration for Buildings Training Course

Professional Development Training Course Outline

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

Course Introduction

IoT Data Integration for Buildings Training Course is designed to equip professionals with advanced skills in smart building technologies, IoT sensor networks, and real-time data integration systems. As the world rapidly shifts toward smart cities, AI-driven infrastructure, and sustainable building automation, organizations are increasingly relying on IoT ecosystems to optimize energy consumption, enhance security, and improve operational efficiency.

This course provides a deep dive into IoT architecture, cloud-based data pipelines, building management systems (BMS), edge computing, and predictive analytics. Participants will gain hands-on expertise in integrating heterogeneous data sources from smart devices, enabling seamless interoperability, and driving data-driven decision-making for intelligent buildings and smart facilities management.

Programme Curriculum

IoT Data Integration for Buildings Training Course

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Course Duration

5 days

Course Objectives

1. Understand IoT ecosystem architecture for smart buildings
2. Design scalable IoT data integration frameworks
3. Implement real-time sensor data ingestion pipelines
4. Apply edge computing for building automation systems
5. Integrate Building Management Systems (BMS) with IoT platforms
6. Develop cloud-based IoT data storage solutions
7. Enable predictive maintenance using IoT analytics
8. Optimize energy efficiency through smart building data
9. Use AI and machine learning for building intelligence
10. Secure IoT networks using cybersecurity best practices
11. Enable interoperability between heterogeneous IoT devices
12. Visualize real-time building performance dashboards
13. Deploy end-to-end IoT integration solutions for smart infrastructure

Target Audience

1. IoT Engineers and Developers
2. Smart Building Facility Managers
3. Data Engineers and Data Scientists
4. Cloud Architects and Solutions Architects
5. Automation and Control System Engineers
6. Energy Management Professionals
7. IT Infrastructure and Network Engineers
8. Smart City and Urban Development Planners

Course Modules

Module 1: IoT Fundamentals for Smart Buildings

- IoT architecture layers and components
- Smart sensors and actuators in buildings
- Communication protocols (MQTT, CoAP, HTTP)
- Device connectivity and interoperability
- Case Study: Smart office building sensor deployment

Module 2: IoT Data Acquisition & Sensor Integration

- Multi-sensor data collection techniques
- Real-time data streaming systems
- Edge device configuration
- Data normalization and preprocessing
- Case Study: Hospital environmental monitoring system

Module 3: Cloud Platforms for IoT Data Integration

- AWS IoT, Azure IoT Hub, Google Cloud IoT

- Data ingestion pipelines and APIs
- Cloud storage architectures
- Scalability and load balancing
- Case Study: Smart university campus cloud integration

Module 4: Building Management System (BMS) Integration

- HVAC, lighting, and security system integration
- BACnet and Modbus protocols
- IoT-BMS interoperability frameworks
- Centralized building control systems
- Case Study: Smart hotel automation system

Module 5: Edge Computing in Smart Buildings

- Edge vs cloud computing models
- Local data processing techniques
- Low-latency decision systems
- Fog computing architectures
- Case Study: Real-time elevator predictive control system

Module 6: IoT Data Analytics & AI Applications

- Predictive maintenance models
- Anomaly detection in building systems
- Machine learning for energy optimization
- Data visualization dashboards
- Case Study: AI-driven smart mall energy optimization

Module 7: Cybersecurity for IoT Buildings

- IoT threat landscape
- Device authentication and encryption
- Network security protocols
- Data privacy compliance (GDPR-style frameworks)
- Case Study: Secure smart government building infrastructure

Module 8: Smart Building Automation & Digital Twins

- Digital twin modeling for buildings
- Simulation of building performance
- Automation workflows and triggers
- Real-time monitoring systems
- Case Study: Smart city high-rise digital twin implementation

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

Start Date	End Date	Location	Price
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