# Integrated Building Systems Training Course

Professional Development Training Course Outline

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

## Course Introduction

Integrated Building Systems (IBS) Training Course is designed to equip professionals with advanced knowledge and hands-on expertise in modern smart infrastructure, building automation, and digital facility management. As buildings evolve into intelligent ecosystems, the integration of HVAC systems, fire safety, electrical distribution, security systems, IoT sensors, and Building Management Systems (BMS) has become essential for efficiency, sustainability, and operational intelligence. This course is aligned with global trends in smart buildings, green construction, energy optimization, and AI-driven facility management, preparing learners to meet the demands of next-generation infrastructure.

With rapid urbanization and the rise of smart cities, professionals must understand how to design, integrate, and manage complex building systems using BIM (Building Information Modeling), digital twins, cloud-based monitoring, and predictive maintenance technologies. This training emphasizes real-world applications, system interoperability, cybersecurity in building automation, and energy-efficient design principles. Participants will gain practical insights into how integrated systems improve lifecycle performance, reduce operational costs, and enhance occupant comfort and safety in commercial, industrial, and residential buildings.

## Programme Curriculum

**Integrated Building Systems Training Course**

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**Course Duration**

5 days

**Course Objectives**

1. Master Smart Building Automation Systems (BAS/BMS integration)
2. Understand IoT-enabled building infrastructure and sensor networks
3. Apply AI-driven predictive maintenance in facility management
4. Design energy-efficient HVAC optimization systems
5. Integrate fire alarm, safety, and security automation systems
6. Develop expertise in Digital Twin technology for buildings
7. Implement BIM-based integrated system design workflows
8. Enhance knowledge of cloud-based building control platforms
9. Analyze cybersecurity risks in smart building ecosystems
10. Optimize energy management using real-time analytics dashboards
11. Apply sustainable green building and net-zero energy concepts
12. Manage interoperability between mechanical, electrical, and plumbing (MEP) systems
13. Improve lifecycle asset management through data-driven decision-making

**Target Audience**

1. Mechanical, Electrical & Civil Engineers
2. Building Services & MEP Consultants
3. Facility Managers & Property Managers
4. Smart City & Infrastructure Planners
5. HVAC & Automation Technicians
6. Construction Project Managers
7. Energy Auditors & Sustainability Experts
8. IoT, BIM & Smart Building Professionals

**Course Modules**

**Module 1: Fundamentals of Integrated Building Systems**

- Overview of smart building architecture
- MEP system integration principles
- BAS vs BMS system structure
- Building lifecycle management concepts
- Communication protocols (BACnet, Modbus, KNX)

- **Case Study:** Smart integration of a commercial office tower reducing operational costs by 18%

**Module 2: Building Management Systems (BMS)**

- Core BMS components and architecture
- HVAC control and optimization
- Lighting and energy control systems
- Alarm and monitoring systems
- Real-time system dashboards
- **Case Study:** Automated BMS implementation in a hospital improving energy efficiency and safety compliance

**Module 3: IoT and Smart Sensors in Buildings**

- IoT device integration frameworks
- Wireless sensor networks in buildings
- Data acquisition and edge computing
- Occupancy and environmental sensors
- Smart analytics for building performance
- **Case Study:** IoT-enabled smart campus reducing energy waste by 25%

**Module 4: HVAC & Energy Optimization Systems**

- Advanced HVAC control strategies
- Energy recovery systems
- Demand-controlled ventilation
- Smart thermostats and automation
- Load forecasting and optimization
- **Case Study:** HVAC optimization in a shopping mall reducing peak energy usage by 30%

**Module 5: Fire Safety & Security Integration**

- Fire alarm system integration with BMS
- Access control systems
- CCTV and surveillance integration
- Emergency response automation
- Safety compliance standards
- **Case Study:** Integrated fire and security system in a high-rise building preventing major incident escalation

**Module 6: BIM and Digital Twin Technology**

- BIM fundamentals for building systems
- 3D coordination of MEP systems
- Digital twin simulation models
- Real-time asset monitoring
- Predictive system behavior analysis
- **Case Study:** Digital twin implementation in a smart airport terminal improving maintenance efficiency

**Module 7: Smart Energy & Sustainability Systems**

- Net-zero energy building concepts

- Renewable energy integration
- Smart grids and energy storage
- Carbon footprint monitoring systems
- Sustainability reporting tools
- **Case Study:** Green-certified office complex achieving LEED Platinum certification

**Module 8: Cybersecurity & Cloud-Based Building Control**

- Cyber risks in smart buildings
- Secure IoT communication protocols
- Cloud-based BMS platforms
- Data protection and compliance
- Remote building management systems.
- **Case Study:** Cybersecure smart building deployment in a financial institution ensuring zero breach incidents

## 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