Construction Innovation & Technology 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

Construction Innovation & Technology Training Course is designed to transform traditional construction practices into a digitally driven, data-powered, and highly efficient ecosystem. With the rapid rise of Building Information Modeling (BIM), Artificial Intelligence (AI), Internet of Things (IoT), digital twins, drones, robotics, and smart construction technologies, the construction industry is undergoing a massive digital transformation. This course equips professionals with the skills to integrate construction technology, automation, sustainable building practices, and advanced project management tools to improve productivity, reduce costs, and enhance safety across all stages of construction projects.

In today's competitive built environment, organizations are adopting PropTech solutions, cloud-based collaboration platforms, lean construction methods, and green building innovations to stay ahead. This training empowers learners to understand and implement construction data analytics, 3D printing in construction, smart site monitoring systems, and AI-driven project forecasting. Whether working on infrastructure, residential, commercial, or mega-projects, participants will gain future-ready expertise to lead digital transformation in construction engineering and project delivery.

Programme Curriculum

Construction Innovation & Technology Training Course

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Course Duration

5 days

Course Objectives

1. Master Building Information Modeling (BIM) workflows for advanced project coordination
2. Apply Artificial Intelligence (AI) in construction planning and risk prediction
3. Utilize IoT-enabled smart construction site monitoring systems
4. Implement Digital Twin technology for infrastructure lifecycle management
5. Integrate construction automation and robotics in modern building processes
6. Develop skills in drone surveying and 3D mapping for site analysis
7. Use cloud-based construction management platforms
8. Enhance productivity using lean construction and agile project delivery methods
9. Promote green building and sustainable construction technologies
10. Apply construction data analytics for decision-making and forecasting
11. Improve site safety using smart wearable safety technologies
12. Understand 3D printing and modular construction techniques
13. Drive digital transformation strategies in construction enterprises

Target Audience

- Civil Engineers and Site Engineers
- Construction Project Managers
- Architects and Design Professionals
- Quantity Surveyors and Cost Engineers
- Infrastructure Development Consultants
- Real Estate Developers and Contractors
- Government and Urban Planning Officials
- Engineering Students and Graduates

Course Modules

Module 1: Building Information Modeling (BIM) & Digital Construction

- BIM fundamentals and lifecycle integration
- 3D, 4D, 5D modeling applications
- Clash detection and coordination workflows
- BIM collaboration tools
- Data integration for project optimization

- **Case Study:** BIM implementation in a high-rise commercial building reducing design conflicts by 40%

Module 2: Artificial Intelligence in Construction

- AI-driven project planning and scheduling
- Predictive analytics for cost estimation
- Machine learning for risk management
- AI-based resource allocation systems
- Smart decision-making frameworks
- **Case Study:** AI-based delay prediction system in highway construction projects

Module 3: IoT & Smart Construction Sites

- IoT sensors for real-time monitoring
- Smart equipment tracking systems
- Environmental and safety monitoring tools
- Connected jobsite data ecosystems
- Remote site management systems
- **Case Study:** IoT-enabled smart construction site improving safety compliance by 60%

Module 4: Drone Technology & Surveying

- Drone mapping and aerial imaging
- 3D terrain modeling and topographic surveys
- Progress tracking using UAVs
- Volume calculation and earthwork analysis
- Regulatory compliance for drone usage
- **Case Study:** Drone-based highway monitoring reducing survey time by 70%

Module 5: Digital Twins & Infrastructure Simulation

- Digital twin concept and architecture
- Real-time infrastructure monitoring
- Predictive maintenance modeling
- Asset lifecycle management
- Integration with BIM and IoT
- **Case Study:** Smart city digital twin used for traffic and utility optimization

Module 6: Construction Automation & Robotics

- Robotic bricklaying and automation tools
- 3D printing in construction
- Automated machinery and equipment
- AI-powered construction vehicles
- Productivity enhancement systems
- **Case Study:** 3D-printed residential building completed in record time with reduced labor cost

Module 7: Smart Project Management Systems

- Primavera P6 and MS Project applications
- Cloud-based collaboration tools
- Agile and lean construction methods

- Resource and cost optimization software
- Real-time project dashboards
- **Case Study:** Cloud-based project tracking system reducing delays in infrastructure projects

Module 8: Sustainable & Green Construction Technologies

- Green building certification systems (LEED, BREEAM)
- Energy-efficient construction materials
- Waste reduction and circular construction
- Carbon footprint reduction strategies
- Smart energy management systems
- **Case Study:** Green-certified commercial building achieving 30% energy savings

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