# BIM for Construction Simulation Training Course

Professional Development Training Course Outline

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

## Course Introduction

Building Information Modeling (BIM) for Construction Simulation is a next-generation digital construction management approach that integrates time and cost into intelligent 3D BIM models. BIM for Construction Simulation Training Course empowers professionals to simulate construction sequences, optimize project workflows, and enhance decision-making using advanced BIM tools like Navisworks, Synchro, Revit, and Primavera integration. It bridges the gap between design intent and real-world construction execution through data-driven simulation and predictive planning.

With the rise of digital twin technology, AI-driven construction planning, Lean construction methodologies, and smart infrastructure development, 4D/5D BIM has become a critical skill for modern AEC professionals. This course equips learners with hands-on expertise in construction sequencing, cost control, clash-free scheduling, risk reduction, and real-time project visualization, enabling them to deliver faster, safer, and more cost-efficient construction projects aligned with global BIM standards.

## Programme Curriculum

**BIM for Construction Simulation Training Course**

**Introduction**

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**Course Duration**

10 days

**Course Objectives**

1. Master 4D BIM construction sequencing simulation
2. Develop expertise in 5D cost estimation & cost control workflows
3. Integrate BIM with Primavera P6 / MS Project scheduling
4. Apply digital twin construction simulation techniques
5. Enhance construction productivity optimization using BIM
6. Perform clash-free construction planning & coordination
7. Enable real-time project visualization & simulation
8. Improve risk mitigation through BIM-based forecasting
9. Implement Lean construction principles using BIM
10. Understand parametric modeling for construction phasing
11. Build competency in quantity takeoff automation (QTO)
12. Strengthen collaborative BIM workflows (ISO 19650 standards)
13. Deliver data-driven construction decision-making models

**Target Audience**

- Civil Engineers & Site Engineers
- BIM Modelers & Coordinators
- Project Managers & Construction Planners
- Quantity Surveyors & Cost Estimators
- Architecture Professionals
- Infrastructure & MEP Engineers
- Construction Management Students
- EPC Contractors & Consultants

**Course Modules**

**Module 1: Introduction to BIM 4D/5D**

- BIM fundamentals and lifecycle understanding
- Evolution from 3D to 5D BIM
- Construction simulation concepts
- Industry applications overview
- Case Study: High-rise residential BIM adoption

**Module 2: Construction Scheduling Basics**

- Work Breakdown Structure (WBS)
- Critical Path Method (CPM) integration
- Activity sequencing principles

- Resource allocation planning
- Case Study: Metro rail project scheduling

**Module 3: 4D BIM Simulation Fundamentals**

- Linking 3D models with timelines
- Construction phasing visualization
- Task-based simulation setup
- Project milestone tracking
- Case Study: Commercial mall construction simulation

**Module 4: 5D BIM Cost Integration**

- Quantity takeoff automation
- Cost database linking
- Budget tracking techniques
- Real-time cost updates
- Case Study: Hospital construction cost optimization

**Module 5: Navisworks for 4D Simulation**

- Timeliner tool usage
- Model aggregation
- Construction sequencing simulation
- Animation generation
- Case Study: Airport terminal expansion project

**Module 6: Primavera P6 Integration**

- Schedule import/export workflows
- BIM + Primavera synchronization
- Resource leveling techniques
- Baseline tracking
- Case Study: Highway infrastructure project

**Module 7: Revit for Construction Planning**

- Parametric modeling techniques
- Workset-based planning
- Phasing tools usage
- Model coordination
- Case Study: Smart residential township

**Module 8: Clash Detection & Resolution**

- Clash detection methods
- Multi-disciplinary coordination
- Issue tracking workflows
- BIM collaboration tools
- Case Study: Industrial plant coordination

**Module 9: Lean Construction with BIM**

- Waste reduction techniques
- Just-in-time planning
- Value stream mapping
- Productivity optimization
- Case Study: Lean hospital construction

**Module 10: Digital Twin Integration**

- Real-time model synchronization
- IoT integration basics
- Predictive analytics usage
- Smart monitoring systems
- Case Study: Smart city infrastructure

**Module 11: Risk Management in BIM**

- Construction risk modeling
- Delay prediction analysis
- Safety simulation planning
- Mitigation strategies
- Case Study: Tunnel construction risk planning

**Module 12: Quantity Takeoff Automation**

- Model-based QTO extraction
- Material estimation accuracy
- Cost validation techniques
- Automated reporting
- Case Study: Shopping complex estimation

**Module 13: 4D Animation & Visualization**

- Construction animation creation
- Stakeholder presentation tools
- Visual reporting dashboards
- Progress simulation videos
- Case Study: Stadium construction visualization

**Module 14: BIM Collaboration Standards**

- ISO 19650 framework
- Common Data Environment (CDE)
- Cloud collaboration tools
- Data exchange workflows
- Case Study: International airport BIM coordination

**Module 15: Advanced BIM Project Execution**

- End-to-end BIM execution plan
- Real-world project lifecycle
- Digital delivery strategies
- Performance analytics

- Case Study: Smart city master planning 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 |

| Start Date | End Date | Location | Price |
|---|---|---|---|
| **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