Open BIM & IFC Standards Training Course

Professional Development Training Course Outline

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

Course Introduction

Open BIM & IFC Standards Training Course is designed to equip professionals with advanced knowledge of Building Information Modeling (BIM), interoperability frameworks, and IFC (Industry Foundation Classes) standards. As the construction and architecture industries rapidly shift toward digital transformation, smart construction, and data-driven project delivery, mastery of Open BIM workflows has become essential. This training provides deep insights into cross-platform collaboration, model exchange standards, BIM coordination, and lifecycle data management, enabling participants to work seamlessly across different BIM software ecosystems while maintaining full compliance with global ISO 16739 IFC standards.

In today’s competitive AECO (Architecture, Engineering, Construction, and Operations) industry, organizations demand professionals skilled in open data environments, digital twin integration, cloud-based BIM collaboration, and sustainable building design workflows. This course bridges the gap between theory and real-world application by focusing on practical IFC implementation, clash-free coordination, semantic data structuring, and interoperable BIM execution plans (BEPs). Learners will gain hands-on expertise in Open BIM strategies, model validation, COBie integration, and collaborative design optimization, making them industry-ready for global infrastructure and smart city projects.

Programme Curriculum

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Course Objectives

By the end of this training, participants will be able to:

1. Understand Open BIM ecosystem architecture and IFC data schema fundamentals
2. Apply ISO 16739 IFC standards for interoperable BIM workflows
3. Execute cross-platform BIM model exchange between Revit, ArchiCAD, and Tekla
4. Develop BIM Execution Plans (BEP) aligned with global standards
5. Implement clash detection and coordination using Open BIM workflows
6. Manage digital twin data integration using IFC-based models
7. Perform model validation, auditing, and quality assurance in BIM projects
8. Use COBie and IFC for asset and facility management integration
9. Optimize cloud-based BIM collaboration and data sharing workflows
10. Enhance construction project lifecycle management using Open BIM
11. Integrate sustainability analysis with IFC-compliant BIM models
12. Apply interoperability solutions in multi-disciplinary engineering projects
13. Prepare for global BIM certification and advanced digital construction roles

Target Audience

1. Architects and Architectural Designers
2. Civil Engineers and Structural Engineers
3. MEP Engineers (Mechanical, Electrical, Plumbing)
4. BIM Managers and BIM Coordinators
5. Construction Project Managers
6. Quantity Surveyors and Cost Engineers
7. Facility Managers and Asset Managers
8. Urban Planners and Infrastructure Consultants

Course Modules

Module 1: Introduction to Open BIM

- BIM evolution and digital construction trends
- Open BIM vs Closed BIM comparison
- IFC standard overview

- Industry applications in global projects
- Case Study: Cross-platform BIM adoption in European infrastructure project

Module 2: IFC Fundamentals

- IFC schema structure and data hierarchy
- Object-based modeling concepts
- IFC file types and exchange formats
- Semantic data mapping
- Case Study: IFC-based hospital project coordination

Module 3: BIM Interoperability Principles

- Data exchange mechanisms
- Software interoperability challenges
- Middleware and conversion tools
- Open standards integration
- Case Study: Multi-software residential tower project

Module 4: BIM Execution Planning (BEP)

- BEP structure and standards
- Workflow definitions
- Responsibility matrix
- Collaboration protocols
- Case Study: Airport infrastructure BIM execution plan

Module 5: Model Coordination Techniques

- Federated model creation
- Clash detection workflows
- Coordination meetings setup
- Issue tracking systems
- Case Study: High-rise commercial building coordination

Module 6: IFC Data Management

- Data classification systems
- Property sets and attributes
- Data validation rules
- Model optimization techniques
- Case Study: Smart city IFC data structuring

Module 7: Digital Twin Integration

- Digital twin concepts
- Real-time BIM data sync
- IoT integration with BIM
- Lifecycle asset tracking
- Case Study: Smart campus digital twin implementation

Module 8: Cloud-Based BIM Collaboration

- Common Data Environments (CDE)
- Cloud BIM workflows
- Version control systems
- Remote collaboration strategies
- Case Study: Global engineering team collaboration

Module 9: Clash Detection & Resolution

- Automated clash detection tools
- Conflict categorization
- Resolution workflows
- Reporting techniques
- Case Study: Metro rail underground system coordination

Module 10: Sustainability in Open BIM

- Energy analysis integration
- Carbon footprint modeling
- Green building compliance
- Material optimization
- Case Study: LEED-certified office building

Module 11: COBie Integration

- COBie data structure
- Asset information management
- Facility handover workflows
- Data export techniques
- Case Study: Hospital facility management system

Module 12: IFC Validation & Quality Control

- Model checking techniques
- Rule-based validation
- Error detection systems
- Compliance auditing
- Case Study: Infrastructure bridge validation project

Module 13: Construction Phase BIM

- 4D scheduling integration
- Construction sequencing
- Resource optimization
- Site coordination workflows
- Case Study: Stadium construction BIM execution

Module 14: Advanced BIM Automation

- Script-based automation tools
- AI in BIM workflows
- Parametric modeling integration
- Workflow optimization

- Case Study: Automated residential housing design

Module 15: Global BIM Standards & Certification

- ISO 19650 overview
- IFC compliance standards
- Global BIM maturity levels
- Certification pathways
- Case Study: National highway BIM standard 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	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
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

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