MERCURY

Introduction to Building Information Modeling (BIM)

24 – 28 May 2027
Rome (Italy)



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Introduction to Building Information Modeling (BIM)

Ref: 16127_1007424 **Date:** 24 – 28 May 2027 **Location:** Rome (Italy) **Fees:** 6200 Euro

Introduction:

The Introduction to Building Information Modeling BIM training course provides a foundation for professionals entering the field of digital construction management and architectural design. BIM is revolutionizing how building projects are conceptualized, designed, constructed, and maintained by offering a collaborative, data-rich methodology.

This Introduction to Building Information Modeling BIM course covers the principles of BIM, its core technologies, and real-world applications across architecture, engineering, and construction AEC sectors. It introduces learners to 3D modeling, coordination workflows, and project lifecycle management using BIM tools. Participants will gain insights into industry standards, protocols, and interoperability concerns within digital construction environments.

Through structured content and practical examples, the Introduction to Building Information Modeling BIM program ensures participants understand how BIM enhances project accuracy, reduces waste, and improves collaboration. Whether working in design, project management, or engineering, learners will leave with the knowledge to implement BIM effectively within their roles.

Targeted Groups:

This Introduction to Building Information Modeling BIM course targets professionals seeking specialized knowledge and skills:

- Architects are aiming to transition from CAD to integrated BIM workflows.
- Civil engineers are involved in infrastructure design and modeling.
- Construction project managers oversee coordination and execution.
- MEP engineers are working on mechanical, electrical, and plumbing design.
- Facility managers focused on lifecycle building management.
- Quantity surveyors and estimators are dealing with digital project costing.
- Urban planners are involved in large-scale development projects.
- Interior designers are seeking improved coordination with architects.
- Structural engineers working in collaborative digital environments.
- BIM coordinators and technicians need foundational training.
- Engineering consultants delivering multidisciplinary project services.

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Course Objectives:

Participants will achieve the following objectives by the completion of the Introduction to Building Information Modeling BIM course:

- Understand BIM fundamentals and core concepts.
- Identify the advantages of BIM across project stages.
- Differentiate between traditional CAD and BIM methodologies.
- Interpret digital models in multidisciplinary environments.
- Apply BIM in planning, design, and facility operations.
- Evaluate software tools used for 3D modeling and data integration.
- Explain collaborative workflows and coordination methods.
- Recognize BIM standards, protocols, and Level of Development LOD.
- Analyze project lifecycle impacts through BIM implementation.
- Communicate BIM's role in sustainable and efficient design.
- Develop simple 3D models using BIM-based platforms.
- Collaborate across disciplines using shared digital models.
- Manage design revisions and data updates in BIM systems.
- Implement data extraction and visualization techniques.
- Identify risk mitigation and cost-saving strategies using BIM.

Targeted Competencies:

Participants will gain the following competencies during the Introduction to Building Information Modeling BIM program:

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- Ability to navigate and interpret BIM models effectively.
- Digital collaboration skills across construction disciplines.
- Understanding of BIM terminology and documentation.
- Competency in utilizing BIM software environments.
- Analytical thinking in spatial coordination and design.
- Skills in data-driven decision-making within AEC workflows.
- Awareness of global BIM standards and compliance practices.
- Capacity to manage and communicate complex project data.
- Technical proficiency in basic 3D modeling tasks.
- Strategic planning using BIM-based lifecycle analysis.

Course Content:

Unit 1: Fundamentals of Building Information Modeling:

- Introduction to digital construction and BIM evolution.
- Key definitions: BIM, 3D modeling, and digital twins.
- Comparison between CAD and BIM approaches.
- Components of BIM: geometry, data, and processes.
- The role of BIM in the Architecture, Engineering, and Construction AEC industry.
- Benefits of BIM include design accuracy, cost control, and scheduling.
- Overview of BIM maturity levels and LOD Level of Development.
- Understanding Common Data Environments CDE.
- Case examples of successful BIM implementation.

Unit 2: BIM Tools, Platforms, and Software Applications:

- Introduction to widely used BIM software e.g., Revit, Navisworks, ArchiCAD.
- Core functionalities of BIM tools for architects and engineers.
- Creating parametric models using BIM platforms.
- Modeling structural and MEP components.
- Integration of 2D drawings with 3D models.
- Data exchange and interoperability IFC, COBie formats.
- Visualizing construction phases with 4D BIM.
- 5D BIM: Linking models to cost estimation.
- 6D/7D BIM for facility management and sustainability.

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Unit 3: BIM in Project Lifecycle Management:

- Planning and pre-design considerations in BIM.
- Design coordination and clash detection techniques.
- BIM-based construction sequencing and logistics.
- Real-time collaboration in multi-disciplinary teams.
- Role of BIM in construction documentation and RFIs.
- BIM for construction monitoring and quality assurance.
- As-built modeling and data capture from the site.
- Integration with facility management software.
- BIM for lifecycle analysis and predictive maintenance.

Unit 4: BIM Standards, Protocols, and Legal Considerations:

- Global BIM standards: ISO 19650, PAS 1192 series.
- Establishing Employer Information Requirements EIR.
- BIM Execution Plans BEP and project protocols.
- Data ownership, intellectual property, and security.
- Defining roles and responsibilities in BIM teams.
- Model validation and quality control procedures.
- Legal implications of model sharing and versioning.
- National and regional BIM mandates and guidelines.
- Aligning BIM practices with organizational objectives.

Unit 5: Practical BIM Implementation and Future Trends:

- Steps for successful BIM adoption in organizations.
- Organizational change management for BIM integration.
- Training and upskilling staff for BIM readiness.
- Using BIM in renovation and retrofit projects.
- Emerging technologies: AI, AR/VR, and digital twins.
- BIM integration with GIS for urban planning.
- Sustainability and energy modeling through BIM.
- Trends in automation and generative design.
- The future of BIM in smart cities and infrastructure.

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Final Insights & Key Takeaways:

This Introduction to Building Information Modeling BIM course equips professionals with a robust foundation in BIM, which is vital for future-proofing careers in the AEC industry. Participants will leave with practical insights and technical abilities essential for digital project delivery. The content bridges theoretical knowledge with real-world application, promoting informed decision-making across disciplines. As BIM evolves, early adopters gain a strategic edge in competitive environments.