



**IFS ACADEMY**

Training For The Future!!

**Industry Domain Oriented**  
**PG Diploma in Building Information Modeling (BIM)**  
**AND**  
**Structural Design & Analysis**  
**(Duration: 4 Months)**  
***(With 100% Placement Assistance)***

**About the Course:**

The IFS Academy Industry Domain Oriented Post Graduate Diploma in Building Information Modeling (BIM) and Structural Design & Analysis is a specialized program designed to provide in-depth knowledge and practical skills in BIM technology and Structural Analysis specifically tailored to different industry domains within the construction sector. BIM is a digital process that enables the creation and management of information-rich 3D models throughout the entire lifecycle of a construction project and perform Structural Analysis.

**Key Features of the Course:**

**Comprehensive Curriculum:** The curriculum is carefully crafted to cover all aspects of BIM, including its concepts, methodologies, tools, and industry best practices. It focuses on the specific requirements and applications of BIM in different industry domains, such as architecture, civil engineering, MEP (Mechanical, Electrical, and Plumbing), and more. It also covers Structural Design & Analysis aspects like Structural Design Principles, Load Calculations, Materials etc. Project domains include Buildings, Bridges, Damns and Hydraulic Structures, Offshore Structures, Retaining Walls and Earth Structures, Industrial Structures, Seismic Analysis and Structural Retrofitting and Rehabilitation.

**Domain-specific Applications:** The course emphasizes the practical implementation of BIM in various industry domains. You will learn how to use BIM software and tools effectively to address domain-specific challenges, streamline workflows, improve collaboration, and enhance project outcomes.

**Hands-on Training:** The program offers hands-on training using industry-standard BIM software, allowing you to gain proficiency in modeling, coordination, clash detection, quantity estimation, scheduling, and other essential BIM functionalities. Practical exercises and real-world projects help you develop the necessary skills and confidence.

**Experienced Faculty and Industry Experts:** The course is taught by experienced faculty members who have extensive knowledge and expertise in the field of BIM. Additionally, industry experts and professionals are invited as guest lecturers to provide valuable insights and share their practical experiences.

**Collaborative Project Work:** The program emphasizes teamwork and communication skills by engaging students in collaborative project work. Working on real or simulated projects, you will learn how to collaborate with architects, engineers, contractors, and other stakeholders to effectively manage and integrate BIM models.

**Placement Assistance and Networking:** The course provides placement assistance and networking opportunities to help you kick-start your career in the BIM and Structural Design & Analysis domain. Industry connections, job placement drives, and guidance from career counselors enable you to explore employment prospects and connect with potential employers.

The Industry Domain Oriented Post Graduate Diploma in BIM and Structural Design & Analysis equips you with the specialized knowledge and skills required to thrive in the rapidly evolving construction industry. Whether you aspire to become a BIM coordinator, project manager, design engineer, Structural Engineer / Analyst or any other BIM-related role, this program will provide you with the expertise needed to succeed.

## **Course Curriculum**

### ***1. Before we begin with Software & Industry Domains***

#### ***BIM Fundamentals***

- **Basic Construction Knowledge:** Familiarize yourself with fundamental concepts and terminology related to the construction industry. Understanding construction processes, materials, and project lifecycle stages will provide a solid foundation for learning BIM in a construction context.
- **Architecture or Engineering Principles:** While not mandatory, having a basic understanding of architectural or engineering principles can facilitate your understanding of BIM processes and workflows. Familiarity with concepts like building systems, structural elements, MEP systems, and design considerations can be beneficial.
- **BIM Skills:** Family Creation, Structural Members & Connection Design, Schedules, Coordination & Clash Checks, Sheet Drawings.
- **Communication and Collaboration Skills:** BIM involves collaboration among various stakeholders, such as architects, engineers, contractors, and project managers. Strong communication and collaboration skills, including effective teamwork, active listening, and clear articulation of ideas, will enhance your ability to work in a collaborative BIM environment.

**Note:** Sr. No. 1 to 3 are compulsory.

## **2. AutoCAD for Civil Engineers**

**Duration = 30 Hrs.**

- Overview of AutoCAD Civil Software
- Generate 2D Drawings & 3D Models in AutoCAD Civil Software
- Working on Industry Domain Oriented Case Studies / Projects like:
  - Draw Site Layouts on AutoCAD
  - Draw high rise structural drawings
  - Develop detailed design / engineered drawings
  - Preparation of 2D Drawings of general arrangement, site layout, sectional drawings.
  - Draw maps, diagrams and profiles using cross sections and surveys to represent elevations and topographical contours.
  - Create detailed 2D & 3D designs using AutoCAD Civil Software.

## **3. Building Information Modeling using Autodesk Revit Architecture / Revit Structure (Please select any 1 out of the 2)**

**Duration = 60 Hrs.**

### **Revit Architecture:**

- Introduction to BIM and Autodesk Revit; Basic Drawing and Editing Tools; Setting Up Levels and Grids; Modeling Walls; Working with Doors and Windows; Working with Curtain Walls; Working with Views; Adding Components; Modeling Floors; Modeling Ceilings & Roofs; Modeling Stairs, Railings, and Ramps; Construction Documents; Creating Tags, Schedules and Details.
- Working on Industry Domain Oriented Case Studies / Projects like:
  - Develop detailed design & drawings
  - Create and maintain details and Revit families
  - Revit 3D modeling: Furniture, Floor, Wall Finish, Dimensions & Electrical Plans
  - Prepare Elevation & Sheets
  - Drafting Walls, Doors, Ceiling & Windows

**Revit Structure:**

Introduction to BIM and Autodesk Revit; Basic Sketching and Modify Tools; Starting Structural Projects; Working with Views; Structural Grids and Columns; Foundations; Structural Framing; Adding Structural Slabs; Structural Reinforcement; Structural Analysis; Project – Concrete Structure; Construction Documents.

**Note: Select any 2 Softwares from Sr. No. 4 to 6**

**4. Structural Design & Analysis using STAAD.Pro**

**Duration = 40 Hrs.**

Introduction to Analysis of Structures; Introduction to STAAD.Pro; Structural Modeling; Functions to complete Geometry; Material Properties; Member Specifications; Loading Particulars; Seismic Analysis; Wind Load Analysis; Post Processing; R. C. DESIGN; Steel Design; Finite Element Method and Staad.Pro.

**5. Structural Design & Analysis using ETABS**

**Duration = 40 Hrs.**

Introduction to ETABS, Modeling in ETABS, Editing Properties, Defining Properties, Structural Objects, Selection Properties, Assign, Design, Detailing, Display and Generate Results.

**6. TEKLA Structural (Steel) Design**

**Duration = 40 Hrs.**

Introduction to Tekla; Modelling in Tekla Basic; Concrete Modelling; Steel Modelling; Assembly and Part Details; Various types of Connections; Pre Engineered Building; Numbering and Detailing; Managing drawings; BOQ.

**Note: Select any 1 Course from Sr. No. 7 & 8**

**7. MSP (AEC) with PPM**

**Duration = 35 Hrs.**

Introduction of Construction Management; MS – Project Software; Important Terms & Various Reports; Numerical & Calculations; Creating project; Project management processes & MSP software; Integration & Resource Management; Scope & Quality Management; Schedule & Cost Management; Communication & Risk Management; Procurement & Stakeholder Management.

## **8. Building Estimation & Costing**

**Duration = 35 Hrs.**

Introduction to Building Estimation and Costing, Building Quantities (Takeoff), Rate Analysis, Bill of Quantity, Introduction to Specification & Tenders.

## **9. Soft Skills Training**

Résumé writing, Aptitude Test, Technical Test, Group Discussion Techniques, Interview techniques, Communication & Presentation Skills, Personality Development.

### ***Deliverables:***

- Technical sessions from industrial and academic professionals on topics of BIM fundamentals.
- Seminars and guidance from industrial professionals on soft skills training.
- **Autodesk Authorised Course Completion Certificate for all the Autodesk Softwares.**
- **Bentley Authorised Course Completion Certificate for all the Bentley Authorised Course Completion.**
- **IFS Academy Authorised Course Completion Certificate for all the other Softwares other than Autodesk.**

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