

# BIM PROFESSIONAL COURSE



**CADDEX™**

# Building Information Modeling

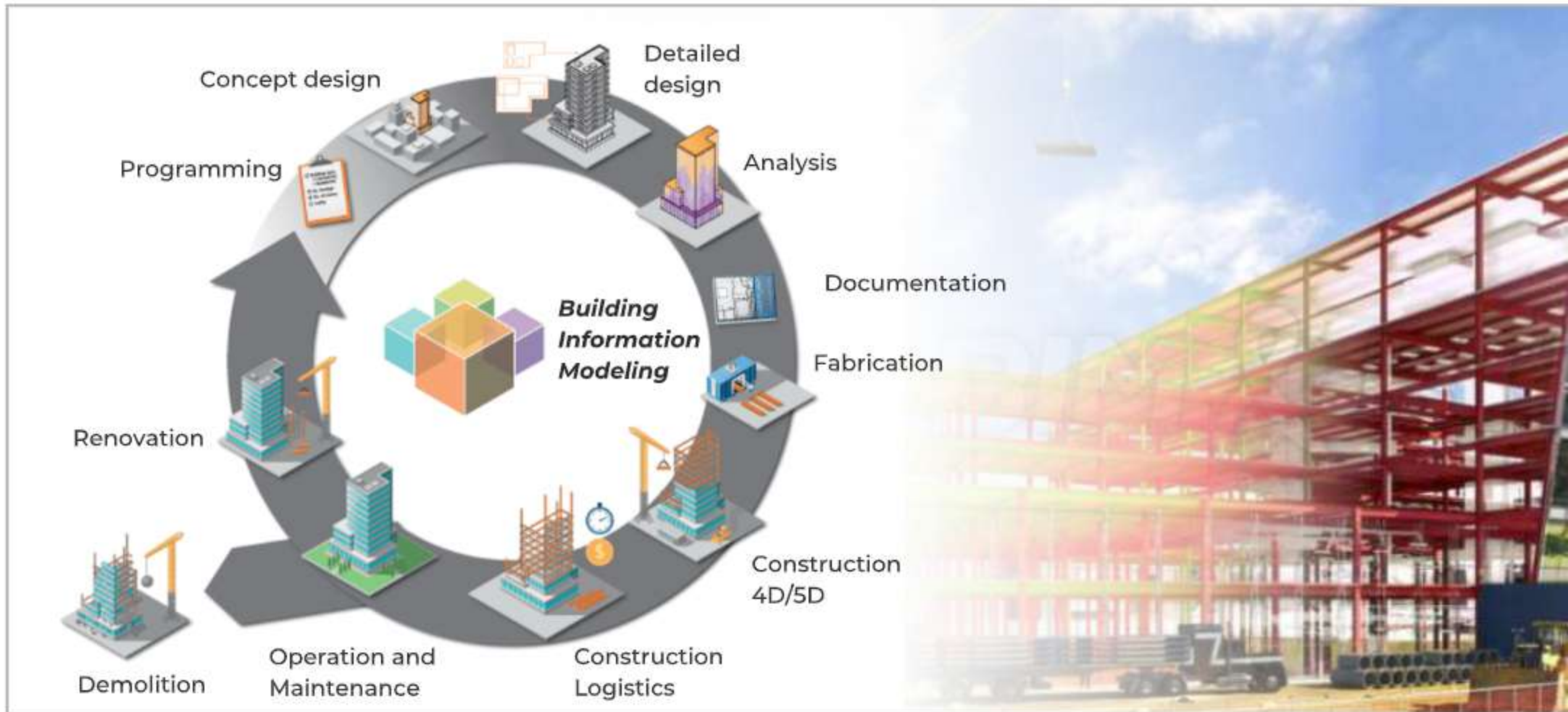
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SOFTWARE / TRAINING / CONSULTANCY / PLACEMENTS

Revit Architecture	40 hrs
Revit Structure	20 hrs
Revit MEP	20 hrs
BIM using Navisworks	16 hrs
BIM 360	4 hrs
<b>Full BIM</b>	<b>100 hrs</b>

*What makes it best?: Hands on practice on live jobs*



**Offline batch**  
**Saturday & Sunday**  
**4 hrs a day @ 12 Weeks**

**Online batch**  
**Monday to Friday**  
**1.5 hrs a day @ 12 Weeks**

## Benefits of BIM

- Improves productivity and reduces cost
- Decreases reworks
- Enhances customer satisfaction
- Enables easy conflict resolutions
- Helps schedule construction process
- Allows improved coordination & better management
- Gives visual access to building information
- Gives complete project snapshot
- Repair, renovation and refurbishment becomes easy
- Supports detailed documentation

## BIM in the construction industry :

All disciplines viz. design, plan, execute and operate involved with a project can share a single database. Architecture, structure, mechanical, electrical, infrastructure, and construction are tied together and challenge to coordinate them is unprecedentedly possible. Energy analysis can be done at early stage of design, and construction costs are becoming more predictable.

BIM allows use of a parametric 3D model to auto generate traditional building documents such as plans, sections, elevations, details, and schedules. Drawings produced using BIM supported software's are not of manually coordinated lines, but interactive representations of a model. The changes made in this Model are automatically coordinated throughout the project, which eliminates the coordination mistakes, improves overall quality of the work.

## Importance of BIM:

BIM not only allows design and construction teams to work more efficiently, but it allows them to capture the data they create during the process to benefit operations and maintenance activities. BIM Interoperability is the ability of AEC project teams to work and communicate fluidly across disciplines and industries, regardless of preferred software tools and vendors. The benefits of BIM are through connecting teams, workflows, and data across the entire project lifecycle—from design and engineering to construction and operations—to realize better ways of working and better outcomes.



## GET A CAP OF BIM MODELER / COORDINATOR

### Who shall do this course (Eligibility) ?

The course is suited for professionals from Architecture, Engineering, Construction, Asset Management, Interior designers and Property Development Industry. Basic understanding of project planning, execution and MEP work is necessary for more benefit and quick learning.

### What are the job opportunities?

Individual certification in Revit Architecture / Structure / MEP will open the door of Revit analyst, MEP analysts while full course of BIM helps open door of BIM Modeler, BIM Expert and in future BIM Specialist / Coordinator.

### Is there any placement support?

Yes, **Caddex** student gets placement support after completion of this course. Though the guarantee is not taken to place you, as per your eligibility, market scenario/ requirement, few contacts of job opportunities are shared.

### Why should you learn?

BIM is more than just working in a 3D environment. The benefits of BIM can be seen heavily in the operational phase of assets and it is the aim of the course to ensure delegates build their knowledge in regard to all stages of a project. An understanding of BIM can drive greater efficiencies during the design, construction and operation phase is critical to BIM and these notions and ideas. The course will also introduce the relevant technologies that enable and support BIM and how these can be utilized on a project.

### How should you learn?

For entire BIM course, one has to undergo all modules of Revit -Architecture, Structure & MEP; MS Project and Navisworks. Concepts of estimate and project budgeting are made clear in training of Revit modules while principles of planning are cleared in MS Project. The course gives you solid and thorough training on Navisworks, it helps professionals to gain control over project outcomes. Integrate, share, and review models and multi-format data.

### What are the course objectives?

To prepare a learner to collaborate building design i.e. applications of 3D CAD (for Drawing & visualization), Navisworks (for Planning) and Revit Architecture for estimation and preparing BIM execution plan (BEP). After completion of program, learner can design and build in a virtual environment prior to starting construction, which helps to improve collaboration, increase building quality, and enhance the schedule while lessening opportunities for errors, resolving conflicts of various services.

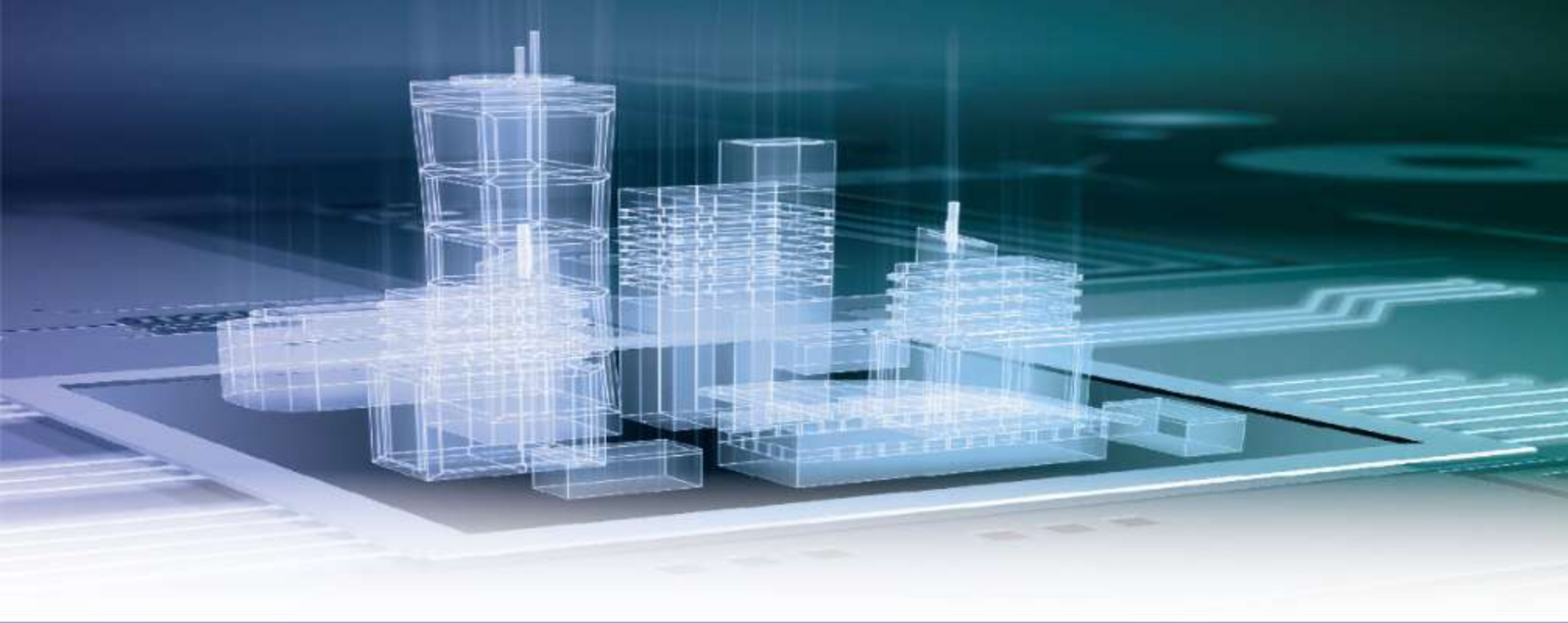


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## Course syllabus

1. Introduction To BIM & Revit User Interface & Project Setup
  - 1.1. Recent Files Screen
  - 1.2. Creating A New Project
  - 1.3. User Interface
2. Project Browser / Project Organization
  - 2.1. Floor Plans, Ceiling Plans, Elevations, Sections, Details, 3d Views
  - 2.2. View Organization, Legends, Schedules
  - 2.3. Sheets, Families, Groups, Revit Links
  - 2.4. View Navigation Elements
  - 2.5. Datum / Host Elements / Hosted Components / Views / Annotations Levels / Grids / Reference Planes
- a) Revit Architectural Modeling**
  3. Basic Architectural Modeling
    - 3.1. Add Walls, Doors, Windows, Floors, Roofs
    - 3.2. Properties Palette / Options Bar
    - 3.3. Draw Options
    - 3.4. Element Selection / Selection Filters
    - 3.5. Modify Elements: Edit Tools / Modify
    - 3.6. Tools/ Geometry Tools
    - 3.7. Load Content / Family Libraries
    - 3.8. Parametric Constraints (Level, Align, Eq, Dimensional Lock)
  4. View Creation And Properties
    - 4.1. Creating Plans, Elevations, Sections
    - 4.2. Callouts, Details, Drafting Views
    - 4.3. Duplicate Views
    - 4.4. View Properties, Control Bar, Visibility Graphics
    - 4.5. 3d Orthographic Views / Perspective Views / Right-Click Menu Option
  5. Basic Structural Modeling
    - 5.1. Grids & Columns
    - 5.2. Floor Slabs / Slab Edges
    - 5.3. Foundations
  6. Develop a Project
    - 6.1. Interior Layout
    - 6.2. Rooms, Room Schedule, Door Schedule
    - 6.3. Furniture, Fixtures, Equipment
    - 6.4. Custom Wall Types, Curtain Walls, Stacked Walls
  7. More Views
    - 7.1. Color Fill Plans / Shadows
    - 7.2. Perspective Camera View
    - 7.3. 3D View Oriented to Other View
  8. Ceilings
    - 8.1. Ceiling View Properties
    - 8.2. Automatic / Sketch-Based Ceilings
    - 8.3. Continuous Ceilings / Cloud Ceilings /Soffits
    - 8.4. Light Fixtures / Ceiling Elements
  9. Detailing
    - 9.1. Annotating Detail Views
    - 9.2. Importing CAD Details
    - 9.3. Detail Lines / Detail Components
    - 9.4. Edit Cut Profile
    - 9.5. Lock 3D View
- 9.6. Detail Groups & Group Editor
10. Vertical Circulation & Penetrations
  - 10.1. Stairs, Ramps, Elevators
  - 10.2. Railings / Railing Extensions
  - 10.3. Multi-Level Vs. Single Story
  - 10.4. Sketch Stairs / Component Stairs
  - 10.5. Shaft Opening
11. Annotation And Sheet Composition
  - 11.1. Model Views, Schedules, Legends, Drafting Views
  - 11.2. Tags, Keynotes, Dimensions, Symbols, Detail Components
  - 11.3. Creating Sheets, Adding Views, Activating/Deactivating Views
  - 11.4. Issues And Revisions
  - 11.5. Output
  - 11.6. Printing / pdf / Settings
  - 11.7. Export To DWFx / dwg / dgn / Settings
  - 11.8. Export To IFC, gbXML
  - 11.9. Export Images
- b) Structural Modeling**
  12. Modeling Of Structural Element
    - 12.1. Foundation, Column, Beam, Wall, Retaining Wall
    - 12.2. Slab, Roof, Raft, Staircase
  13. Reinforcement Modelling for all elements
    - 13.1. Cover Setting
    - 13.2. Rebar Placement, Rebar Sketch
    - 13.3. Rebar Shape Understanding
  14. Structural Steel Modeling
    - 14.1. Create Structural Steel Elements
    - 14.2. Column, Beam, Connection
  15. Annotation & Sheet Composition
    - 15.1. Model Views, Schedules, Legends, Drafting Views
    - 15.2. Tags, Keynotes, Dimensions, Symbols, Detail Components
    - 15.3. Creating Sheets, Adding Views, Activating/Deactivating Views
    - 15.4. Issues And Revisions
  16. Output
    - 16.1. Printing / Pdf / Settings
    - 16.2. Export To DWFx / dwg / dgn / Settings
    - 16.3. Export To IFC, Export Images
- c) MEP Modeling**
  17. MEP Basic
    - 17.1. MEP Interface
    - 17.2. Using The Included Working File
    - 17.3. Working With Views
    - 17.4. File Concept
    - 17.5. Starting A MEP Project
    - 17.6. Linking An Architect Revit File
    - 17.7. Copy – Monitor Level And Grid
    - 17.8. Copy – Monitor MEP Fixture
    - 17.9. Initial Plan View, Project Information
    - 17.10. Linking CAD File
  18. Views
    - 18.1. Controlling Visibility
    - 18.2. Elevation & Section
    - 18.3. Creating Callout
    - 18.4. Ceiling Plans
- 18.5. View Template
- 18.6. Section Box, Scope Box
19. Space And Zone
  - 19.1. Room And Room Tag
  - 19.2. Creating Spaces, Modifying Spaces
  - 19.3. Area And Volume Calculation
  - 19.4. Creating Zone, System Browser & Zone
  - 19.5. Color Scheme
20. Systems
  - 20.1. System Browser
  - 20.2. Graphic Overrides
  - 20.3. Checking Systems, System Inspector
  - 20.4. Duct Sizing
21. HVAC
  - 21.1. Mechanical Setting – Duct
  - 21.2. Air Terminal And Mechanical Equipment
  - 21.3. Adding And Modifying Fittings
  - 21.4. Ducts & Duct Systems
  - 21.5. Automatic Ductwork Layout
22. Piping System
  - 22.1. Plumbing And Pipe Work
  - 22.2. Mechanical Setting – Pipes
  - 22.3. Piping Systems, Adding & Modifying Pipes
  - 22.4. Adding And Modifying Fitting
  - 22.5. Generate Pipe Layout
23. Plumbing
  - 23.1. Adding Plumbing Fixture
  - 23.2. Modifying Plumbing Fixture
24. Electrical Systems
  - 24.1. Electrical Settings, Components
  - 24.2. Cable Tray & Conduit
25. Detailing
  - 25.1. Creating Details
  - 25.2. Adding Detail Lines
  - 25.3. Detailing in 3D
  - 25.4. Importing Details
  - 25.5. Editing & Exporting Details
26. Family Creation
  - 26.1. Parametric Family Creation
  - 26.2. Basics Of MEP Family
27. Advance Steel Introduction
28. Civil 3D Introduction
29. Basic Escape For Rendering
- d) BIM Coordination and Management**
  30. Navisworks as a BIM tool
    - 30.1. Introduction
    - 30.2. User Interface Tour
    - 30.3. Compiling & Managing A Project
    - 30.4. Exploring The Model
    - 30.5. Reviewing, Redlining, Links, And Switchback
    - 30.6. Viewpoint Creation, Sectioning, And Animation & Interactivity
    - 30.7. Simulation & the Timeliner
    - 30.8. Interference Management - Clash Detective Material Quantification
- e) BIM 360 Docs**
  31. BIM 360 Introduction
    - 31.1. Account-Level Configuration
    - 31.2. Project Configuration
    - 31.3. Common data environment
  32. ISO 19650 Basic Introduction And Plannerly BIM masterclass



## What are the learning outcomes?

Upon completion of course, one can

- Prepare 3D, 4D, 5D models
- Audit, check and review models
- Manage teams and projects
- Prepare BIM Execution Plan (BEP)
- Design project model
- Space planning & area analysis
- Prepare perspectives
- Create walkthroughs
- Construction scheduling
- Site utilization planning

**Advance BIM:**

- Detect internal and external clashes
- Identify time based clashes
- Cost estimation
- Energy Analysis



**What is the learning method / pedagogy?:** All the fundamentals are taught from the point of view of their practical applications on field. Actual drawings are shared with you to study and learn skills of taking-off quantity & preparing estimates and budgets. Basic concepts of project planning are made clear. Visualization and logical thinking skills are developed possibly through site visit. Assignments are given for study and confirmation of actual learning.

**How does assessment take place?:** After completion of major learning / topic, there is an assignment to judge your level of understanding of that particular chapter. Your performance is tracked and finally converted into 'Grade' which is reflected on the certificate.

**Grading:** A+: Excellent; A : Very good; B : Good; C: Satisfactory

**How to pass and avail certificate?:** You need to attend all sessions, complete all assignments, appear for an external viva, if any, and pay all fees to be eligible for this certificate. In absence of which you will get attendance certificate.

**What are the requirements / pre requisite to undergo this training?**

You need to be a positive learner. You shall bring a scientific calculator and laptop. Assignments shall be completed and submitted on time. 100% attendance is compulsory and generally, deliveries are not repeated.

Language of instruction: English (mostly) or Hindi (if necessary)

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## Why choose us?



Right Approach



Right Curriculum



Right Trainer



Right Study Environment



Right Skills Development

CADDEX is a companionship of Civil Engineers & Architects formed with a motto of imparting value added competency skills enhancement training to the construction personnel, students and faculties at all levels to transform them into professionals.

### Short Term Certification Programs -

- BIM for Construction
- MS Project for Project Planning
- Concrete Technology & Formworking
- Construction Site Management
- Estimation, Billing & Budgeting
- Construction Quality Control
- Excel, AutoCAD, Word & Power Point
- Item Specifications & Drawing Reading

### Upcoming courses -

- Value engineering & Cost control
- Construction Procurement Management
- Executing & Managing Highway projects
- ERP applications in Civil
- Certificate in MEP
- Tendering & Contracting of Civil Projects
- Property Valuation
- Modern Formwork Systems for Concrete

### Other Services -

- Accelerated Skills Development Programs tailor-made for companies
- Customised Management Development programs
- Customised Execution Development programs
- Educational reformations & consultancy for universities