

# ETABS

Online Training

Contact us:



[contact@protrainy.com](mailto:contact@protrainy.com)



[www.protrainy.com](http://www.protrainy.com)



+91-8617833413



+91-7205397106

# Course Outcome

**Learner will able to ...**

- **Analyse and Design of RC Frame Structure**
- **Use of Indian Standard Codes**
- **Handful Operational Knowledge in Computer Software ETABS**
- **Important aspects in Civil-Structural and Earthquake Engineering**



## Course Description

This course has been prepared to assume that the learners are completely new to the software and having some basic knowledge in Civil Engineering and Structural-Design field. The main purpose of this course to make learners familiar with Methodology used in Analysis and Design of RC Frame Structures with respect to Indian Standard Codes by using Manual Calculations as well as Computer Software ETABS, and MS Excel so, that they get crystal clear concepts while Designing RCC Frame Building Structures.

# Detailed Syllabus

- 1** **Course Introduction**
  - 1.1 Welcome to The Course
  - 1.2 Overview of Course
  
- 2** **Analysis of Beams**
  - 2.1 Shear Force and Bending Moment
  
- 3** **General Details of the Structure**
  - 3.1 Details of Structure
  
- 4** **Study of Architectural Plan and Structural Planning**
  - 4.1 Floor Plan and Architectural Aspects
  - 4.2 Structural Planning as per IS 456: 2000 and IS 13920: 2016 and General Thumb Rules

## **5 Load Calculations**

### **5.1 Dead Load [DL] and Super-Imposed Dead Load [SIDL]**

Calculations as per IS 875 (Part 1) 1987

### **5.2 Live Load from IS 875 (Part 2): 1987**

### **5.3 Wind Load Calculations By Force Co-efficient Method as per IS**

**875 (Part 3): 2015**

### **5.4 Seismic (Earthquake) Load Parameters and Important Terms in**

**Seismic Loading as per IS 1893 (Part 1): 2016**

### **5.5 Wall Load Calculations for Super-Imposed Dead Load [SIDL]**

## **6 Brief Reading and Explanation of IS 1893 (Part 1) : 2016**

### **6.1 Brief Reading and Explanation of IS 1893 (Part 1) : 2016**

## **7 Analysis of RC Frame by Software ETABS**

### **7.1 General Introduction to ETABS**

### **7.2 Introduction to Methodology**

### **7.3 Enter Basic Input Data; Define Grid and Story Data**

### **7.4 Define Material Properties**

### **7.5 Define Section Properties**

### **7.6 Define Diaphragms**

### **7.7 Check Snap Options**

## **7**

**7.8 Draw the Structure**

**7.9 Assign Model Conditions**

**7.10 Check Model for any Modelling Error**

**7.11 Define Load Pattern for Load Cases and Mass Source for Seismic Weight**

**7.12 Set Load Cases**

**7.13 Assign Loads**

**7.14 Define Load Combinations and Envelope**

**7.15 Define Analysis Options**

**7.16 Analyse the Structure and Check the Behaviour**

**7.17 Design the Structure**

## **8**

**Design the Structural Members by using Manual Calculations as per Codal Provisions**

**8.1 Overview of Indian Standard Codes and Design Procedure for Structural Members**

**8.2 Sample Design of Isolated Footing and Calculations on MS Excel Sheet**

**8.3 Sample Design of Column and Calculations on MS Excel Sheet**

**8.4 Sample Design of Beam and Calculations on MS Excel Sheet**

**8.5 Sample Design of Slab and Calculations on MS Excel Sheet**

## **9**

**Drawing of Design-Detailing**

**9.1 Overview of Drawings of Design-Detailing**

## **10**

**Importing Auto cad file into ETABS**

## **11**

**Closure**

**11.1 Complete Overview of Course**

# What you will Learn

- Structural Planning of the Structure w.r.t. Codal Provisions of IS Codes
- Load Calculations for different types of Loads, for Building Structure w.r.t. IS Codes
- Analysis of RC Frame Structure with Computer Software ETABS
- Manually Design Procedure w.r.t. to IS Codes for each type of Structural Sections - Footing, Column, Beam, Slab
- Manually Design Procedure of Staircase, Design of Footings, Columns, Beams and Slabs with Microsoft Excel Sheets
- Equivalent Static Analysis for RC Frame Structure as per IS 1893 (Part 1): 2016
- Handful Operational Knowledge in Computer Software ETABS
- Design-Detailing of Structural Sections
- Use of Indian Standard Codes - IS 456, IS 875, IS 1893 (Part 1), IS 13920
- Important aspects in Civil-Structural and Earthquake Engineering

## Requirements and Pre-requisites

- Computer System with Installed software ETABS and Microsoft Excel
- Basic understanding of Building Materials and Basics of Structural Analysis w.r.t Axial Forces, Bending Moments and Shear Forces
- Basic understanding of Design RCC of Structural Elements

## Who this course is for

Civil/Structural Engineers and Student/Graduate of Civil Engineering aspired to become Structural Designer Beginner Learners of ETABS software