

# SYLLABUS FOR PRACTICAL STRUCTURAL DESIGN APPLICATION COURSE

WELCOME TO GURURAYAR ASSOCIATES



Live project training on  
RCC G+9 building

Factory steel structure with  
foundation, pile, pile cap  
manual design calculations

in XL sheet and  
in Etabs, RCDC and  
SAFE softwares

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**PRACTICAL  
STRUCTURAL  
DESIGN  
WEBINAR**



# Overall Contents Of Practical Structural Design Application Course (PSDAC) Syllabus:-

- ▶ Structural design basics & concepts Theory in practical way .
- ▶ Practical Loading Calculation f(Gravity &Lateral) or RCC & STEEL Structures.
- ▶ Manual Design of RCC Superstructure (Slab,Beam,Column) in XL.
- ▶ Manual Design of RCC Sub-structure (Shallow & Deep Foundations)in XL.
- ▶ Etabs software design of RCC G+9 building.
- ▶ RCDC software automated detail drawings generation.
- ▶ SAFE software combined and MAT footing design.
- ▶ Manual design of STEEL super structure (Deck plate, Beam, Column) in XL.
- ▶ Manual design of all types of steel structure connections in XL.
- ▶ Etabs software design of Ware house STEEL structure with 5 ton EOT crane.
- ▶ PEB steel structure conceptual design in Etabs software.

# ***SYLLABUS FOR PRACTICAL STRUCTURAL DESIGN APPLICATION COURSE***

## **GENERAL PART:-**

- Conceptual Application of Structures in Residential, Commercial and Industrial fields.
- Introduction of Basics of Structures & Technical terms
- IS codes for various analysis, design and detailing & Small Frame Analysis Load transfer concept in in XL sheet.
- Gravity Load manual calculations (DL,LL,FF,EQPL) in XL sheet.
- Wind & Seismic load manual calculations in XL sheet.

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## **RCC DESIGN PART:-**

- One Way Slab manual Design in XL sheet.
- Two Way Slab manual Design in XL sheet.
- Beam manual Design (Singly and Doubly reinforced beams) in XL sheet.
- Column manual design (Axial Gravity, Uniaxial, Biaxial Bending types) in XL sheet.
- Staadpro OR Etabs analysis and design software introduction, input through Various tab, modelling.

(Contd..)

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## **RCC DESIGN PART:- (Contd..)**

- Staadpro OR Etabs analysis and design of slabs, beams and columns.
- Staadpro OR Etabs result extraction and minor manual exceptional checks that are not covered in software.
- Ductile & Non-ductile frame design.
- Footing manual Design in XL sheet.
- Footing design in RCDC software
- Pile cap manual conceptual design in XL sheet.
- Pile reinforcement manual Design in XL sheet.

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- Pile cap design in RCDC software.
- Combined & Mat Foundation design SAFE software. (This is special inclusion for timely fee-paying persons only)

## **STEEL DESIGN PART:-**

- Introduction to steel Structures.
- Industrial Building Steel Truss conceptual design.
- Tension Member manual design in XL sheet.
- Compression Member manual design in XL sheet.

(Contd...)

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## **STEEL DESIGN PART:- (Contd..)**

- Flexural Member manual design in XL sheets.
- Tension, Compression and Flexural members design in staadpro OR Etabs software.
- Various Connections in manual Design in XL sheets.
- Connections design in Etabs OR Staadpro.
- Lifting analysis of Padeye through FEM method in staadpro
- Built up beam in Staadpro OR Etabs.

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## **PROJECT WORK:-**

### **RCC:-**

- Design of G+9 building

### **STEEL:-**

- Design of Industrial Storage Building

Project submission, Review and Q&A.