



## Welcome to StructuralGuru-Gururayar Associates

### ENGINEERING CONSULTANCY & ONLINE TRAINING'S

ISO 9001-2015 CERTD, Government Registration No.TN270027105

International IEC No. : CCGPP6717H

We StructuralGuru are Education & Training division of GURURAYAR ASSOCIATES MSME registered and ISO 9001-2015 certified single ownership company established in 2016 with 25 years of Industrial, commercial and residential design/consultancy experience in the field, we decided to alter direction. Now, we share our passion by helping others.

#### OUR MISSION:

To build an independent professional structural design engineers/consultants in all over India and abroad as well. We train people with our practical design methodology which is being currently practiced in engineering consultancy. We are committed to excel the quality and economic structural design services to our clients as well.

Our ramp up process is designed to empower your team.

Business mentors are key—that's why when it comes to client selection, we're choosy. We want to give each of you the right time and guidance you deserve.

OUR MOTTO: HELP EACH OTHER! GROW  
TOGETHER!!

TRANSFORMING MILLIONS OF CIVIL ENGINEERS FROM ALL OVER  
THE GLOBE IN TO DESIGNING AND CONSULTANTS FIELD!

MAJOR BENEFITS OF OUR  
TRAINING'S



**MAJOR FEATURES / BENEFITS OF OUR**

**"PRACTICAL STRUCTURAL DESIGN CONSULTANCY TRAINING"**

- ✓ Life time doubts and clarifications support through WA, or SKYPE, or ZOOM.
- ✓ 25 yrs experienced teaching in practical way.
- ✓ Structural design concepts covered from basic scratch to advanced level.
- ✓ XL manual design for both RCC & STEEL design.
- ✓ 4 nos internationally recognized popular software designs (Staadpro, Etabs, RCDC, SAFE ) covered.
- ✓ Get hands on Experience with industry experts.
- ✓ Live project design work-shop with exercises reviews encouraged.
- ✓ Live Project work reviews & guidance's.
- ✓ Life time access for xl files, software files, manuals, books, notes.
- ✓ Latest version software files supply and installation guidance.
- ✓ Life time after training technical guidance support.
- ✓ Remote software installation on call & on charge facility.
- ✓ Life time membership in our VIP technical discussion group.
- ✓ Placement assistance through CV referral with our consultancy business owner's team.
- ✓ Life time guidance for consultancy set up.
- ✓ Part time job with us in business development team for fresher's.
- ✓ Academic project/thesis support guidance's.
- ✓ Paid internship workshops training for students.
- ✓ FREE one time digital marketing campaign set up to get customers for your business.
- ✓ Easy switch facility from Video mode to LIVE mode webinars.

[WWW.STRUCTURALGURU.IN](http://WWW.STRUCTURALGURU.IN)

**TR-1000 -1. PRACTICAL STRUCTURAL DESIGN  
CONSULTANCY COURSE (VIDEO CUM LIVE  
MODE)**



**STRUCTURALGURU**

**GREETINGS !**  
**Civil/Structural/Architectural Engineers !**



**DO YOU HOLD A DIPLOMA , BACHELOR ,  
OR MASTER DEGREE AND  
STILL WORKING IN SITE  
& TIRED OF IT ?**



**MOVE TO OFFICE BASED DESIGN  
ENGINEER OR DESIGNER ROLE BY  
JOINING OUR**

**PRACTICAL RCC & STEEL STRUCTURAL DESIGN  
"CONSULTANCY" TRAINING**

**VIDEO MODE**  
Now with **200 Hrs VIDEO MODE**  
training, become "Structural  
Design Expert" in just  
**2 MONTHS !**

**LEARN ALTERNATE SKILL NOW !! ELEVATE YOUR  
LIFE STYLE !!**

**Insights of Training...**

- Basics and concepts of Structural Engineering, Loading calculations, Manual XL Designs from scratch to advanced level.
- RCC G+9 building Static + Dynamic analysis and design & STEEL structure Warehouse With 5ton EOT Crane design
- Training in both Manual xl clac & Software Etabs, StaadPro, SAFE for superstructure and sub structure.
- Advanced Concrete Design and Automated Detailing techniques through RCDC software
- Consultancy setup training with a digital marketing campaign to get design customers from all over India or anywhere you want.

**ONLY FEW SLOTS LEFT!!**

**DON'T MISS**

**NOW ON  
70%  
DISCOUNT  
OFFER !!!**

**Hurry Up to DIRECTLY Register @ [www.structuralguru.in](http://www.structuralguru.in)**

What you will get in this Training?

- RCC Superstructure Manual design XL sheets
- RCC Substructure Manual design XL sheets
- STEEL Superstructure Manual design XL sheets
- STEEL connections Manual design XL sheets

- Software files are supplied.
- ETABS, STAADPRO, RCDC, SAFE Software Files
- ETABS, STAADPRO, RCDC & SAFE software worked out example design files
- PDF code books and PDF reference books
- Daily Class notes
- 1 Year Free Access for All Class Recorded Videos.
- Finally, after completion of Project submission, Course Completion Certificate

At the end of this course, you will be fully equipped to simply pass any job interviews and hit the design engineer job easily or install your own consultancy business in your area. Software Manual Files

## Overall Contents of Practical Structural Design Application with Consultancy Setup Training (PSDAC) Syllabus: -

- Structural design basics & concepts Theory in practical way.
- Practical Loading Calculation (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.

## DETAILED SYLLABUS FOR PRACTICAL STRUCTURAL DESIGNING 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.

### 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.
- 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.
- 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.
- 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 Pad-eye through FEM method in STAADPRO
- Built up beam in STAADPRO OR ETABS.



## RESPONSE SPECTRUM ANALYSIS OF HIGH RAISE BUILDING IN ETABS Part: -

- Defining RSA functions.
- Manual calculation of sa/g acceleration values
- Creating Dynamic loads.
- Creating Dynamic modal cases.
- Perform RSA Analysis & Scale factor correction of static & Dynamic base reactions.
- Correcting story deflections, drifts, and story torsional effects in modal by shear wall or bracings insertion.
- Performing structural design.

### STAADPRO Contents Covered :-

- Overview of Structural Analysis and Design
- Introduction to STAAD Pro. V8i
- Getting Familiar with STAAD Pro. Workspace
- STAAD Editor
- GUI and Structure Wizard
- Creating a New Project and Units
- Global Coordinate System Vs. Local Coordinate
- Beta Angle
- Introduction to File, Edit, View, Selection, Geometry, Commands, Analyze, Mode

- Introduction to Snap Node/Beam
- Insert Node and Add Beam
- Translational Repeat
- Circular Repeat
- Move, Rotate and Mirror
- Member Offset
- Connect Beam Along

- Intersect, Merge, Break, Splits, Renumber and Stretch selected members
- Introduction to Setup, Geometry, General, Analysis/Print and Design
- Assigning Properties
- Assigning Supports
- Group Specification
- Assigning Load
- Structure Analysis
- Material Specification
- Loading
  - Self-weight
  - Nodal Load
  - Member Load
  - Area Load
  - Floor Load
  - Wind Load
  - Moving Load
  - Reference Load
  - Plate Load
  - Seismic Load
  - Automatic Load Combination
- Introduction to Analysis
- Perform Analysis

- Overview of Output Page
- Pre-analysis and Post-analysis Print
- Inactive/Delete Specification
- General Guideline for Design
- Column and Beam Design
- Reinforced Concrete Design G+9 Building with Response Spectrum Analysis.
- Warehouse steel structure design with 5 tons EOT crane.

### **BENEFITS OF THIS TRAINING:**

- Due To Online, It Saves Travel Time, Energy and Related Expenses.
- One Year Backup Consultation Support for Their Office Works Extended for Trained Candidates.
- Clear Understanding of Civil & Structural Design Process.
- Expertise In Manual Calculations.
- Expertisation In Design Software Like STAADPRO/ETABS/SAFE Etc.,
- Knowledge In Current Industry Work Culture.
- Immediate Take Off When Job Is Assigned, No Pre-Trainings Required from Junior Level.
- Ability To Become Senior/Lead Level Within One Year of Job Assignment.
- Expertisation In Construction Problems Solving.
- Expertisation In Quick Solutions at Site.

### **ENGINEERING CONSULTANCY SETUP TOPICS COVERED :-**

- Basic Requirements
- Organizational Registration Requirements.
- Organization Setup Process
- Govt. Regulation Related Requirements
- Investment Plan And Financial Requirements
- Stake Holder Requirements
- Management Board Requirements

- Business Developments Process and Internal Management
- Digital & Organic Marketing Process.

Following Practical Structural Design points, we teach in our ONLINE Structural Design training: - (Both Manual design in XL and Softwares method)

1. Load transfer sequence and technique in a structure
2. Limitations of all design and detailing softwares
3. How Fix, pin end conditions are to be constructed at site
4. What are the effects of interchanged end condition at site?
5. What and how are the construction loads to be added in structural design, which are not said by any codes
6. Practical layout of re-bars in slabs based on BM diagram
7. How to assume the rebars in design and reconfirm the assumptions
8. How to prepare the beam and column layout drawings as per Architectural drawings
9. How to orient the columns according to major and minor axis BM's
10. How to structurally rectify the deflection failures in constructed beams
11. How to rectify the buckling failures in constructed columns
12. How to redesign any columns or beams to increase the sizes after construction
13. How to give input to the structural design softwares according to site condition
14. How to read the output of structural design softwares and understand them for detailing
15. How to do the ductile and non-ductile designs in Seismic zones
16. How to create a structural analysis model from scratch say from architectural drawing
17. Why the section classification check has no elastic stage
18. What are the meanings of Plastic, compact and semi-compact stages?
19. What is diaphragm and how to define in practical way
20. P-Delta analysis in practical way
21. How to design steel structures without bracing
22. Practical concepts of Connection load calculation
23. What are the different partial end conditions and how to practically model in software?
24. How to avoid slenderness of steel beam and columns without increasing section geometry
25. Practical concepts of all type of foundations including pile cap
26. Thermal and shrinkage Crack checks

27. Practical examples of Strength design and serviceability designs
28. How to prevent Sliding and Overturning failures in foundation designs
29. PEB structures design
30. FEM analysis of a lifting pad eye hook, that is used to lift steel beams in site works
31. How to create detailed drawings from structural softwares
32. Stages and sequences of construction according to design phases
33. Stages of checks in structural drawings and calculations, with check list
34. What is Definition of Structure
35. What is meant by members and elements in the structure?
36. Why masonry wall is not a structural member in structure
37. Why beams and columns are not required if a structure is made up of shear walls only
38. What is flexure member and why is it being called so
39. How a tension member looks like in real time scenario and how to design it
40. What is compression member? and examples
41. What is the difference between structural analysis, design and detailing?
42. What is meant by FEM method for analysis and design, and why to use that
43. What are the varieties and types of loads and how to apply in real time?
44. What is compression and tension zone of a member/element and why is it important and application in real time
45. What are the limitations of all structural design softwares and how to overcome these limitations?
46. What is limit state design and working stress design and which one to use
47. What is linear and non-linear analysis and how to execute
48. What is major, minor and neutral axis of a member and why is it important
49. How to define SF, BM, Torsion, Axial-force, in a practical way with some tricks
50. How to define buckling, deflection and crippling
51. How to technically define various end support conditions like FIX, SS, PIN, ROLLER and Free
52. How to construct various end support conditions like FIX, SS, PIN, ROLLER and Free



53. What is meant by elastic, plastic and ultimate stage of a material and how to apply in real time design process
54. How to refer the parameters from IS codes
55. Load transfer technique of a structure with sequence
56. How to calculate the gravity loads?
57. How to calculate the construction loads
58. How to calculate the MEP services loads
59. How to calculate the crane impact load
60. How to calculate the wind load as per code
61. How to apply wind loads on structure based on surface pressure coefficients
62. How to calculate the seismic loads as per code
63. How to apply seismic loads on structure based on floor wise distribution
64. How to calculate the base reactions of column for foundation design in manual method
65. What is the difference between one way & two-way slab and how the load transfer happens in real time?
66. Why to assume depths of slabs while stating the calculation
67. What is effective depth and why not the engineering process does not use overall depth in design
68. Why shorter span is governing direction in slab design
69. What are the reasons for having cover in concrete and how to identify cover based on various environment?
70. What is meant by effective span and difference between full span and effective span
71. What is collapse and serviceability case loading combinations and how to apply in real time
72. Why loading combination is important and what is meant by combining loads
73. What are the steps involving in slab, Beam, Column, Foundation and pile cap design?
74. How to calculate the size of members from BM
75. How to calculate the stirrups requirement from SF
76. How much is minimum depth and reinforcement requirement of code
77. In which situations collapse combination to be used and in which serviceability to be used
78. What is the difference between cast in situ and precast structures and how to implement in real time?

79. How the main bar and distribution bars have to be laid at site, and what will happen if wrongly laid and how to rectify the fault
80. How to calculate clashed BM for two-way slabs
81. How to design FIX, SS, and cantilever slabs and Beams
82. How to check the crack width of slabs, beams and columns
83. What is singly reinforced beam and doubly reinforced beam and in which situation those to be designed
84. What is under and over reinforced beams
85. For which loads factor of safety not to be applied in beam design and why
86. How to calculate loading on beams from various types of slabs
87. What is the difference between roof beams, plinth beams and tie beams and why the depth varies for all and how the end condition is to be designed and constructed?
88. How to execute the deflection check of slabs and beams
89. What is the difference between vertical shear and horizontal shear in a beam and how to design the stirrups for those two?
90. How to get the slabs, beams in just pass condition
91. Difference between short and long column and its application in real time
92. Difference between axial, uniaxial and biaxial loading columns and its application in real time
93. How to apply the wind and seismic loads in column design
94. Difference between reinforcement equally distributed on 2 sides and 4 sides and its application
95. How to calculate slender BM and P-Delta BM in column design
96. What is meant by interaction or utilization ratio and why to calculate this
97. How to design circular columns
98. Difference between STAADPRO, ETABS, RCDC and connection softwares
99. How to rectify failure cases in FEM softwares
100. Various types of failures and understanding them all
101. How detailing in FEM softwares is not much clear
102. How to export and execute detailing in RCDC software
103. What is the relation between  $Kl/r$  ratio and  $l/d$  ratio?
104. Why  $Kl/r$  ratio is very important in steel member design
105. Why truss required one end pin and another end roller support

106. Difference between rolled sections and welded build-up sections and in which situations they are to be used
107. What is section compactness check and implementation in design?
108. Buckling and deflection check of steel columns
109. Why column is always a cantilever member in any structure?
110. Effects of wind and seismic loads in beam, column, slabs and foundation
111. Why composite beam is not a non-linear member
112. Various types of connections and shortcut trick to calculate the forces on connections
113. Always welded connection is not FIXED, there can be even SS connection with weld
114. Shear, moment and roller connections
115. Connections for members connected in various angles
116. How to calculate BP size from column size, and how to calculate pedestal size from BP size
117. Bolt and weld design
118. Plate to beam, Beam to beam, Beam to column, Column to column various connections and implementation
119. Truss how to design
120. What happens if steel structure with bracing and without bracing
121. What happen if steel structure has all pin joints or all fixed joints
122. Various type of foundations, shallow and deep concept
123. In which situation isolated, combined, raft, mat, strip, strap, pile foundations are constructed
124. How to read soil analysis report and get the input for foundation design
125. Design of pile reinforcement, pile cap
126. Roles and responsibility of a civil, structural, architectural and other discipline engineers in giving input to structural design
127. Design of foundations in RCDC software
128. PEB concept, modelling and implementation
129. Lift hook design in FEM method
130. How to execute the structural design Project successfully.

**SYLLABUS FOR PRACTICAL STRUCTURAL DESIGN  
APPLICATION**

**COURSE PROJECT WORK:**

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**RCC PROJECT Work :-**

- Design of G+9 building.
- Review and Q&A.

**STEEL PROJECT WORK: -**

- Design of Industrial Storage Building Project submission.
- Review and Q&A.

**MODE & DURATION OF COURSE**

**Mode** : This VIDEO MODE course training. Training Videos will be shared in google drive.

**Duration** : Course Duration is 2 months.

**Google Drive Access:** Video Access will be available for 12 Months

**COURSE FEE & PAY TERM DETAILS:**

Payment Modes: **PhonePe/PAYTM/Gpay no. 9629121300**

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[gururayarassociates@gmail.com](mailto:gururayarassociates@gmail.com) for further details.

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