



STRUCTURAL DESIGN.

And Analysis Course

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WHY SKILLZ?

SKILLZ BY CIVILIANZ – ELEVATE YOUR ENGINEERING CAREER

Skillz by Civilianz is your ultimate upskilling platform, designed exclusively for CivilEngineers ! Whether you aspire to master structural Design or excel in Quantity surveying our expert led online courses equip you with industry – relevant skills and hands on knowledge. Stay ahead of the curve with practical training real world applications career boosting insights

STRUCTURAL DESIGN

SOFTWARES COVERED

- > STAAD Pro
- > E TABS
- > SAFE
- > Auto CAD

COURSE FEATURES

- > Industry Oriented Classes
- > Live / Recorded Sessions
- > Work In Live Projects
- > Placement Assistance
- > Assignments & Discussions
- > Academic & Mentor Support

CLASSES LED BY INDUSTRY EXPERTS

WHY STRUCTURAL DESIGN COURSE?

The Structural Design Course By Skillz Is An Excellent Choice For Anyone Looking To Build A Strong Foundation In Structural Engineering. This Course Offers:

- **Industry Relevant Curriculum** Covers essential topics such as load calculations, material selection, and design principles based on real world applications.
- **Expert Led Training** Learn from experienced professionals who provide practical insights and hands on experience.
- **Software Integration** Gain proficiency in industry standard tools like AutoCAD, STAAD.Pro, and ETABS.
- **Flexible Learning** Online accessibility with self-paced modules, making it ideal for students and working professionals.
- **Certification & Career Growth** Earn a recognized certificate that enhances job prospects in civil engineering and construction industries.



**IF YOU WANT TO MASTER STRUCTURAL DESIGN
WITH PRACTICAL KNOWLEDGE AND JOB-ORIENTED SKILLS,
THIS COURSE IS A PERFECT CHOICE!**

WHO ALL WILL BE BENEFITTED ?

The Structural Design Course By Skillz Benefits A Wide Range Of learners, Including:

1. **CIVIL ENGINEERING STUDENTS:** Enhances academic knowledge with practical design skills and software training.
2. **FRESH GRADUATES:** Provides industry relevant expertise to boost employability in construction and infrastructure projects.
3. **WORKING PROFESSIONALS:** Helps structural engineers, architects, and civil engineers upskill and stay updated with modern design techniques.
4. **CONSTRUCTION PROFESSIONALS:** Contractors, site engineers, and project managers can improve their understanding of structural safety and efficiency.
5. **ENTREPRENEURS & CONSULTANTS:** Ideal for individuals planning to start their own structural design or consulting firm.
6. **GOVERNMENT & PRIVATE SECTOR ENGINEERS:** Beneficial for professionals involved in public infrastructure projects, ensuring compliance with building codes and safety regulations.

“Gain Real-World Expertise & Launch Your Own Structural Consultancy!”

BENEFITS OF TRAINING

- Convenient and Flexible Timing.
- One year backup consultation support for office works extended for trained candidate.
- Expertise in Manual and software designs.
- Knowledge in current industry work culture.
- Become a certified and experienced structural consultant.



STRUCTURAL DESIGN & ANALYSIS COURSE (SDAC)

BASICS OF STRUCTURAL ANALYSIS & DESIGN

INTRODUCTION TO TYPES OF STRUCTURES

- Classification of structures
- Types of supports
- Types of beams
- Types of loadings

BASICS OF MATERIALS, LOADS, SFD, BMD ETC.

- Basics of concrete and steel used for structural analysis
- Types of loads and load combinations
- Basics of Mechanics & strength of materials

SEISMIC AND WIND LOAD CALCULATION

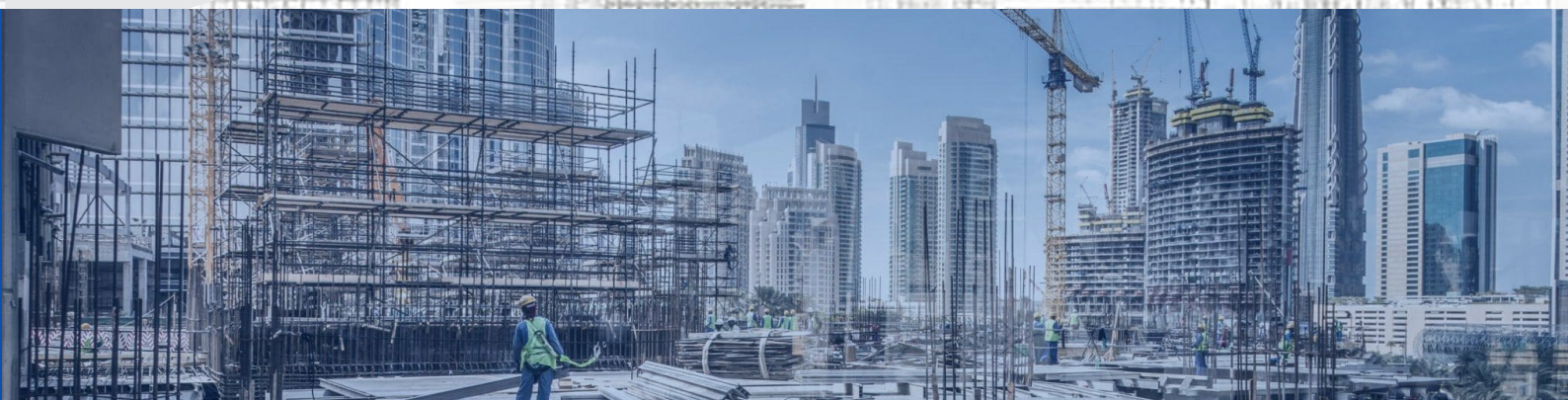
- Seismic load calculation as per IS 1893
- Wind load calculation as per IS 875 part 3

INTRODUCTION TO IS CODES USED FOR DESIGN OF RCC & STEEL STRUCTURES

- IS 456 – Design of RCC structures
- IS 800 – Design of Steel structures
- IS 3370 – Design of liquid retaining structures
- IS 1893 – Earthquake resistant structures
- IS 875 – Loads and load combinations
- IS 13920 – Ductile design & detailing
- IS 1786 – HYSD bars
- SP 16 – Design charts
- SP 34 – Detailing of RCC structures
- IS 12278 – NPB sections

STRUCTURAL ANALYSIS & DESIGN OF CONCRETE & STEEL STRUCTURES

- Design philosophy
- Guidelines for fixing position and orientation of columns
- Guidelines for fixing beam position
- Guidelines for fixing the slab direction



MANUAL DESIGN STRUCTURAL ELEMENTS

DESIGN OF SLABS

- Types of slabs & loads to be considered for design as per IS code
- Design of one way and two way slabs as per IS 456
- Use of SP 34 for detailing of slabs

DESIGN OF BEAMS

- Loads to be considered for design as per IS code
- Design of singly and doubly reinforced beams as per IS 456
- Use of SP 16 charts for design of beams
- Use of SP 34 for detailing of beams

DESIGN OF COLUMNS

- Design of columns as per IS 456
- Use of SP 16 charts for design of columns
- Use of SP 34 for detailing of columns

DESIGN OF FOOTINGS

- Types of footings
- Design of isolated and combined footings as per IS 456
- Use of SP 34 for detailing of footings

DESIGN OF STAIRCASES

- Types of staircases
- Design of open well, dog legged and spiral staircase
- Design provisions as per IS 456
- Use of SP 34 for detailing of staircase

DESIGN OF RETAINING WALLS

- Types of retaining walls
- Design of cantilever and counterfort retaining wall
- Software for design of cantilever retaining wall
- Detailing of retaining walls

DESIGN OF WATER TANKS

- Types of water tanks
- Load cases to be considered for design
- Design of water tanks as per IS 3370
- Detailing of water tanks

ASSIGNMENT DISCUSSION

MANUAL DESIGN OF G+1 RCC STRUCTURE

LOAD CALCULATIONS

- Types of loads and load combinations to be considered
- Calculation of DL and LL as per IS 875

DESIGN OF STRUCTURAL ELEMENTS

- Design of slabs
- Design of beams
- Design of columns
- Design of footings
- Design of staircase

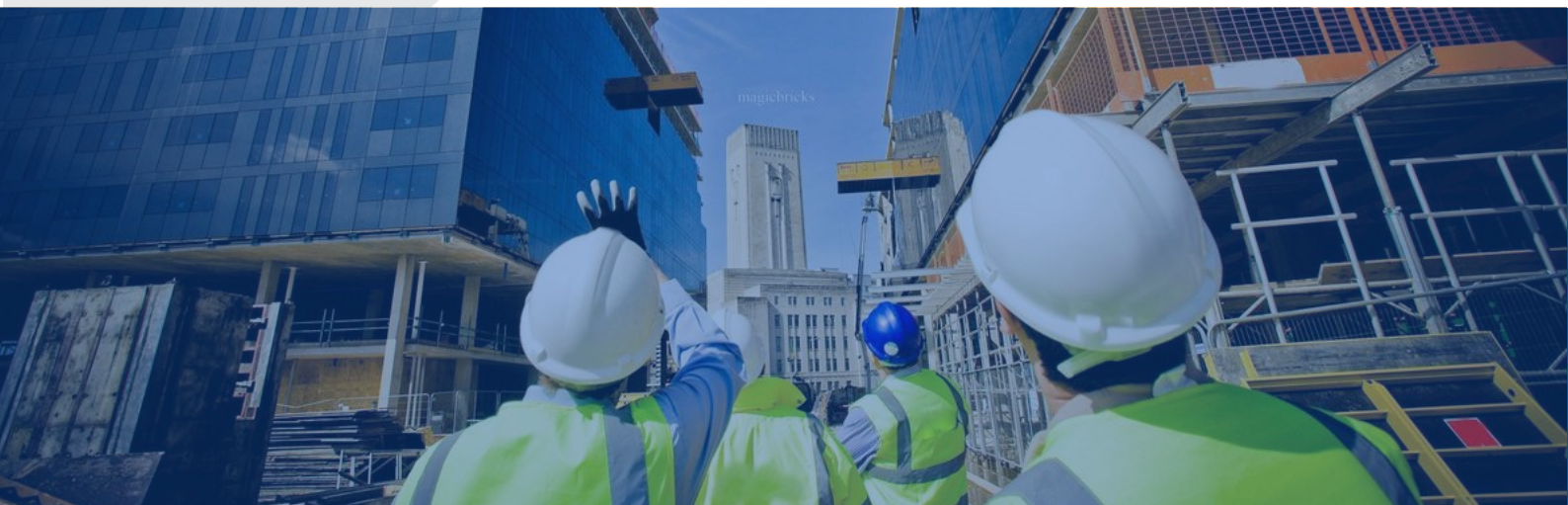
STRUCTURAL DESIGN & ANALYSIS USING STAAD.PRO

- OVER VIEW OF STAAD.PRO
- STRUCTURAL MODELING IN STAAD.PRO
- MATERIAL CONSTANTS & SECTION PROPERTIES
- MEMBER SPECIFICATIONS AND SUPPORTS
- LOADS APPLICATION
- PERFORMING ANALYSIS
- POST PROCESSING & REPORT CREATION

- RCC DESIGN
- STEEL DESIGN
- SEISMIC ANALYSIS
- COMPARISON OF OUTPUT RESULTS WITH MANUAL DESIGN
- ASSIGNMENT DISCUSSION
- WIND LOAD ANALYSIS

STRUCTURAL DESIGN & ANALYSIS USING ETABS

- OVER VIEW OF ETABS
- STRUCTURAL MODELING IN ETABS
- DEFINING PROPERTIES
- DESIGN
- DETAILING
- RESULTS
- COMPARISON OF OUTPUT RESULTS WITH MANUAL DESIGN
- ASSIGNMENT DISCUSSION



STRUCTURAL DESIGN & ANALYSIS USING SAFE

- Over view of SAFE
- Modeling and Structural Design of Slabs using FEM
- Modeling and Structural Design of Footings using FEM
- Assignment Discussion

DUCTILE DETAILING

OVERVIEW OF DUCTILITY & DUCTILE STRUCTURE AND ITS IMPORTANCE

- Definition and significance of ductility
- Design provisions as per IS 13920 latest

DUCTILE DETAILING OF RCC STRUCTURES AS PER LATEST CODES

- Ductile detailing of beams
- Ductile detailing columns
- Importance of shear walls and detailing provisions

DUCTILE DETAILING OF STEEL STRUCTURES AS PER LATEST CODES

- IS 18168 codal provisions for design and ductile detailing of steel structures

OVERVIEW & DRAFTING COURSE ON AUTOCAD SOFTWARE

- Basics of AUTOCAD tools used for drafting
- Structural Drafting using AUTOCAD

LIVE PROJECTS

SITE VISITS TO VARIOUS ON GOING PROJECTS

- Soil Investigation using SPT
- RMC plant
- Pile testing
- Ongoing RCC Structure construction site visit
- Ongoing PEB Structure construction site visit

DESIGN EXCEL SHEETS WILL BE PROVIDED AS PART OF COURSE WITH EXPLANATION

- Excel sheet for slabs
- Excel sheet for footings
- Excel sheet for staircases
- Excel sheet for retaining wall

FAQ

? What about the timing and duration of this course

Classes will be in online mode and will be conducted three days in a week (live session). Each class will be of 1.5 hr session. Recorded session of the live classes will be available within 24 hrs timeframe. Total expected duration of live class for complete the syllabus is 6 months. Recorded sessions will be available for a period of 1 year from date of joining.

? Who will be handling the classes

Industry experts with a proven track record will be dealing the session.

? Can I work in live project

Definitely , live projects will be dealt throughout the course. Infact, even students can suggest projects also, which will be reviewed and worked along the course

? Do I need previous knowledge in structural engineering to join the course


Basic knowledge which you gained in graduate classes is necessary for joining the course. Our classes are designed from basics to advanced level which will cater the needs of every student enrolled.

? Can I undertake consultancy works after completing the course

Yes, You will be able to do consultancy works after successful completion of this course. Support and guidance of our academic team will be there in undertaking projects for a duration of 1 year.



For Admission Details

 **+91 97787 88755**

skillztvm@gmail.com

Corporate Office
Civilianz HQ
BTR Lane, Thampanoor,
Thiruvananthapuram

www.skillzindia.in