CETPA INFOTECH PVT. LTD.

CURRICULUM FOR STAAD.PRO

INTRODUCTION TO STAAD PRO

- Introduction of Staad Pro
  - Starting Staad Pro
  - Creating New file
  - Opening Existing File
  - Closing a file
  - Saving & Saving As
  - Module Review
- Salient Features
- Hardware Requirements
- Staad Pro Screen information
- Overview of Structural Analysis and Design
- Types of Structures
- Idealization of Structures
- Various Unit Systems
- Coordinate Systems
  - Global Coordinate System
  - Local Coordinate System
- Staad Commands and Input Instructions
- Command Formats
  a. Free Formatting Input
  b. Commenting Input
  c. Meaning of Underlining in the Manual
- Problem Initiation and Title

STRUCTURAL MODELING

- What are Nodes, Beams, and Plates
- How things are done in the Input File
- Geometry Creation Methods
- Using Structure Wizard
  - Things you can do in Structure Wizard
  - Drafting the Geometry using a Snap / Grid
- Viewing
- Selecting
- Using Selecting While viewing 3D Geometry
- Joint Coordinate Specification
  - Graphical User Interface
- Member Incidence Specification
  - Graphical User Interface

OTHER USEFUL FUNCTION TO COMPLETE THE GEOMETRY

- Introduction
- Translation Repeat
- Circular Repeat
- Insert Node
- Add Beams between midpoints
- Add beams by perpendicular intersection
- Connect beams along an Axis
- Cut Section
- Undo / Redo
- Dimensioning

PROPERTY DETAILS

- Material Specification
  - Material Constants
  - Constant Specifications
- Member Property Specifications
  - Prismatic Property Specifications
  - Tapered Member Specifications
  - Specifying Properties from Steel Table
  - User Table Specifications
- Member Orientation Specifications
  - Beta Angle

MEMBER

- Inactive / Delete Specifications
- Listing of Members / Joints by Specifications of Groups
- Member Offset
- Member Release Specifications
- Member Truss Specifications
- Member Tension / Member Compression Specifications
- Global Support Specifications
  - Fixed / Pinned / Fixed but Release / Spring Supports
  - Inclined Supports
- Curved Member Specifications
- Member Cable Specifications

LOADING PARTICULARS

- Loading Specifications
- Self weight Loading Specifications
- Member Load Specifications
- Area Load / Floor Load Specifications
  - Area Load
  - Floor Load
- Load Combination Specifications

ANALYSIS

- Analysis Specifications
- Print Specifications
  - Pre Analysis Print Commands
  - Post Analysis Print Commands
- Load List Specifications
- Report Generation
  - Output file

POST PROCESSING

- Introduction
- First Steps
  - Node Displacement
  - Node Reactions
  - Beam forces
  - Beam Stresses
  - Beam Graphs
  - Plate Contour
  - Plate Results Along line
  - Animation
  - Reports

R. C. DESIGN

- Concrete Design As per IS 456
  - Design Parameters
- Design of Beams
  - Design for Flexure
  - Design for Shear
- Design of Columns
- Concrete Design Specifications
- Concrete Design Parameter Specification
- Concrete Design Command
- Concrete Take of
- Concrete Design Terminator
- Interactive Design
  - Beam Brief
  - Column Brief

STEEL DESIGN

- Steel Design As per IS 800
- Allowable Stresses
  - Axial Stresses
  - Bending Stresses
  - Shear Stress
  - Combined Stress
- Parameter Specifications
- Code Checking Specifications
- Member Selection Specifications
- Tabulated Results Of Steel Design
- Interactive Designs

SEISMIC ANALYSIS

- Introduction to Seismic analysis
- Earthquake loading in high rise buildings
- Implementation of various load combinations of Earthquake analysis using IS 1893
- Analysis and Design of building considering Earthquake loading

WIND LOAD ANALYSIS

- Introduction to Wind load analysis
- Calculation of wind forces in High rise building
- Analysis and Design of building for Wind loading

DESIGN OF ELEVATED WATER TANKS

- Modeling of Intz tank, circular tank, rectangular tank
- Hydro Static loading in these tanks
- Analysis and Design of these tanks

DESIGN OF SLABS

- Introduction to Slabs
- Design of Slabs using IS 456
- Modeling of 1 way , 2 way and Cantilever Slab using Staad Pro
- Analysis and Design of these Slabs using Staad Pro

INTRODUCTION TO STAAD BEAVA

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