STAAD PRO

INTRODUCTION OF DESIGN CONCEPT AND PROCEDURE

- STAAD Pro Introduction
- Starting Staad. Pro
- Creating New file
- Opening Existing File
- Closing a file
- Saving & Saving As
- Module Review
- Salient Features
- Hardware Requirements
- StaadPro Screen information
- Overview of Structural Analysis and Design
- Types of Structure
- Idealization of Structures
- Various Unit Systems
- Coordinate Systems
    - Global Coordinate System
    - Local Coordinate System
- Staad Commands And Input Instructions
- Command Formats
    - Free Formatting Input
    - Commenting Input
    - 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
- Connect beams along an Axis
- Cut Section
- Undo / Redo
- Dimensioning

PROPERTY DETAILS

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

MEMBER

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

LOADING PARTICULARS

- Loading Specification
- Self-weight Loading Specification
- Member Load Specification
- Area Load / Floor Load
  - Area Load

- Floor Load
- Load Combination Specification

ANALYSIS

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

POST PROCESSING

- Introduction
- First Steps
  - Node Displacement
  - Beam forces
  - Beam Stresses
  - Node Reactions
- 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 Specifications
- Concrete Design Command
- Concrete Take Off
- Concrete Design Terminator

STEEL DESIGN

- Steel Design As per IS:800
- Allowable Stresses
  - Axial Stresses
  - Bending Stresses
  - Shear Stress

- Combined Stress

- Parameter Specifications
- Code Checking Specification
- Member Selection Specification
- 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 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