

INTRODUCTION TO ETABS

- ❖ Introduction of ETABS
 - Starting ETABS
 - Creating New file
 - Opening Existing File
 - Closing a file
 - Saving & Saving As
 - Module Review
- ❖ Salient Features
- ❖ Hardware Requirements
- ❖ ETABS 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
- ❖ ETABS 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

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

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
- ❖ 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
- ❖ Shell Uniform Load Sets

ANALYSIS

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

WIND LOAD ANALYSIS

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

DETAILING

- ❖ Detailing Process
- ❖ Edit Views
- ❖ Create and Manage Drawing Sheets

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

STAIR CASE DESIGN

- ❖ Modeling of Dogged legged and circular stairs.
- ❖ Loading
- ❖ Analysis and Design of these stairs

SHEAR WALL DESIGN

- ❖ Creating surface
- ❖ Loading
- ❖ Creating panel
- ❖ Designing

- ❖ Concrete Design Command
- ❖ Concrete Take of
- ❖ Concrete Design Terminator
- ❖ Interactive Design
 - Beam Brief
 - Column Brief

STEEL DESIGN

- ❖ Steel Design As per IS 800
- ❖ Steel joist Design
- ❖ Steel connection Design
- ❖ 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