

STAAD.Pro V8i

DAY 1

Introduction to structural engineering: Structure, types of structures, basic definitions, Idealization of structures

About STAAD.Pro: Features, hardware requirements, STAAD.Pro screen organization, GUI overview, Unit systems, Structure geometry and Coordinate systems (Global and Local)

Introduction to STAAD Editor

DAY 2

Model Generation: Concept of Pre Processor, Analysis Engine, Post Processor; Creating a new file, creating nodes, adding beam, plate, solid, enhanced grid tool (linear, radial, irregular), Geometry beam page

Task: Model generation using grid tool

DAY 3

Select Menu: All options explained

Model Editing Tools: Translational Repeat, Circular Repeat, Mirror, Rotate

Task: Model generation using translational repeat

DAY 4

Geometry Operations: Insert Node in existing member, adding beams, selecting members Renumbering, How to create Beam /Column & Curved Beams, Add Mid points, Add Perpendicular intersection beam, Cut Section, Stretch /Split BEAMS, Different Viewing Controls for Structure Geometry

Running structural wizard

Task: Practice of commands

DAY 5

Modelling of Trusses

DAY 6

Modelling of a Transmission Tower

DAY 7

Modelling of Water Tank

DAY 8

Support Specification: Pinned, fixed, enforced, foundation

Support Page: Create, edit, delete, assignment method

Assigning Property: Material, circle, rectangle

Task: Assign supports and member property to a framed structure

DAY 9

Material Specifications: Material Table, Modulus of elasticity, weight density ratio, poisson's ratio, co-efficient of thermal expansion, damping ratio; Member Offset

Loading: Load cases, Primary Load menu, Load commands, Self weight, Nodal load, Member load- concentrated force or moment, linear varying, trapezoidal, hydrostatic

Analysis: Perform analysis, run analysis

Task: Analysis of beams with different end conditions and various types of loading

DAY 10

Loading: Area load, floor load, wind load, load combinations, seismic definitions

Task: Complete load definitions for a building design (including seismic and load combinations)

DAY 11

Analysis of a structure: Perform analysis, run analysis, pre analysis print, post analysis print

Concrete Design: Beam design, column design, design parameters- selecting and defining parameters, assigning, end concrete design

Task: Analysing the output file after designing a framed structure

DAY 12

Beam Design

Slab Design: One way slab

Tasks: Modelling, analysis and design of framed structures with given specifications

DAY 13

Introduction to FEM

Modelling in STAAD.Pro: Geometry- adding plate, create infill plates, generate surface meshing, generate plate mesh, plate thickness

Loading: Pressure on full plate, concentrated load, partial pressure on plate load

Slab Design: Two way slab

Task: Design a two way slab with given specifications

DAY 14

Staircase design: Common terminologies, modelling and design procedure

Task: Design a staircase for given specifications

DAY 15

Shear Wall Modelling and Design: Adding surface, Commands; Surface thickness, surface load, design parameters

Task: Creating a structural model of a shear wall

DAY 16

Introduction to STAAD.Beava

Design: Bridge deck

Task: Practice bridge deck modelling, analysis and design.