Teks academy
Transferring Experts Knowledge To Students

STAAD.PRO

www.teksacademy.com

Module 01 -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)

Module 02 - Introduction to STAAD Editor

- 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

Module 03

- Select Menu: All options explained
- Model Editing Tools: Translational Repeat, Circular Repeat, Mirror, Rotate Task: Model generation using translational repeat

Module 04 - Geometry Operations

- Insert Node in existing member
- adding beams, selecting members Renumbering
- How to create Beam /Column & Curved Beams
- Add Midpoints
- Add Perpendicular intersection beam
- Cut Section
- Stretch /Split BEAMS
- Different Viewing Controls for Structure Geometry
- Running structural wizard Task: Practice commands

Module -05

- Modeling of Trusses

Module -06

- Modeling of a Transmission Tower

Module-07

- Modeling of Water Tank

Module 08- 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

Module09- 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

Module10- Loading

- Area load
- floor load
- wind load
- load combinations
- seismic definitions
- Task: Complete load definitions for a building design (including seismic and load combinations)

Module11- 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: Analyzing the output file after designing a framed structure

Module-12

- Beam Design
- Slab Design: One-way slab

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

Module-13

- Introduction to FEM
- Modelling in STAAD.Pro: Geometry- adding plate, create infill plates, generating surface meshing, generating plate mesh, plate thickness
- Loading: Pressure on a full plate, concentrated load, partial pressure on plate load
- Slab Design: Two-way slab
- Task: Design a two-way slab with the given specifications

Module-14

- Staircase design: Common terminologies, modeling and design procedure Task: Design a staircase for given specifications

Module-15

- Shear Wall Modeling and Design: Adding surface, Commands; Surface thickness, surface load, design parameters
- Task: Creating a structural model of a shear wall

Module-16

- Introduction to STAAD. Beava Design: Bridge deck
- Task: Practice bridge deck modeling, analysis, and design.

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