

STAAD Pro Software Training – Civil

Objective:

STAAD is the abbreviation for Structural Analysis and Design. STAAD.Pro is one of the popular software that is used for analysing & designing structures like – buildings, towers, bridges, industrial, transportation and utility structures. Designs may include any building structures like tunnels, culverts, bridges, piles, petrochemical plants; and building materials like timber, concrete, steel, cold-formed steel, and aluminium.

STAAD or STAAD.Pro was developed by Research Engineers International at Yorba Linda, CA in 1997.

To get rid of the boring & time-consuming manual procedures Structural Engineers started using automated software STAAD.Pro

Course Overview:

STAAD.Pro[®] is one of the most widely-used software for developing and analyzing the designs of various structures, such as petrochemical plants, tunnels, bridges etc. STAAD.Pro[®] v8i, the latest version, allows civil engineering individuals to analyze structural designs in terms of factors like force, load, displacements etc. Multisoft Virtual Academy STAAD.Pro[®] v8i online training builds expertise in using the software at a professional level in domains, including construction companies, government agencies, architecture firms etc.

Participants are equipped with various software functionalities like model generation and editing; loading analysis; concrete designing etc. The STAAD.Pro[®] v8i software training also offers proficiency in using the seismology; report generation; and steel and foundation design features. After completing the STAAD.Pro[®] v8i training, individuals can work as Structure Designers, Project Managers, Building Analysts, Quality Analysts, Bridge, Designers etc.

STAAD.Pro Software Capabilities:

- Analyse for time dependent effects
- Check designs for cold-formed sections
- Comply with seismic requirements
- Create finite element meshes
- Design & analyse with finite element meshes, structural models
- Design beams, columns, walls and resisting frames
- Design to international design standards

- Loads and load combinations
- Integrate slab and foundation designs
- Model reinforced concrete, steel
- Structural design documentation
- Share structural models

Why to learn?

STAAD.Pro provides flexible modeling environment, fluent data collaboration, and advanced features. It best structural analysis & design software that supports Indian as well as all international codes.

STAAD.Pro permits structural engineers to design & analyze any type of structure virtually. Structural consultants, structural engineering firms, departments in construction companies, government agencies, owner/operators, offshore platform designers, many more are extensively using this software.

Learning Objectives:

The course will cover all the steps involved in structural analysis & designing of concrete & steel.

This course will introduce one to STAAD Pro's state of the art user interface, prevailing analysis and design engines with a sophisticated finite element (FEM), visualization tools, and dynamic analysis capabilities.

Some of the features that we focus in training include:

Model Generation: Generation of an interactive menu-driven model with concurrent 3D display 2D & 3D graphics generation using rectangular or polar coordinate systems Segments of repetitive geometry used to generate complex structural models.

- **Model Verification:** 2D/3D drawings on screen and printer/plotter full 3D shapes for frames, elements Isometric or any rotations for full 3D viewing.
- **Static Analysis:** 2D/3D analysis on the basis of state-of-the-art Matrix method to handle extremely large work. Linear, non-linear, p-delta analysis with automatic load & stiffness correction.
- **Dynamic/Seismic Analysis:** Mass modelling, frequency, and mode shape Response spectrum extraction, analysis of time history Modal damping ratio for individual models.
- **Secondary Analysis:** Finite element capabilities, concrete design, steel design, and timber design. Forces & displacements at sections between nodes. Maximum & minimum force envelopes.

Learning Outcome:

- Student will be able to complete object-oriented instinctive 2D/3D graphic model generation.
- Student will learn to use pull-down menus, tool-tip help, and floating toolbars.
- Student will be able for carrying out flexible zooms and multiple views.
- Student will know to make isometric & perspective views and 3D shapes.
- Student will know the use of simple command language and built-in command file editor.
- Student will learn how to generate graphics/text input.
- Student will be able to do efficient algorithm that will minimize disk space requirements.
- Student will learn to take presentation quality printer plots of geometry and results as part of the run output.
- Student will be able to perform accurate and numerically efficient plate/shell element incorporating out-of-plane shear & in-plane rotation; automatic element mesh generation; comprehensive element stress output including in-plane stresses, out-of-plane shear, bending & principal stresses at nodal, as well as, user-specified points.
- Student will learn how to achieve user-specified design parameters to customize a design.
- Student will know to perform code check, member selection and optimized member selection consisting of analysis/design cycles.
- Student will be able to design concrete beams/columns/slabs/footings as per all major

Course Contents:

- Introduction to STAAD.Pro® V8i
- Model Generation and Editing
- Introduction to Loading
- Automatic Load Generation
- Concrete Design
- Seismology
- FEM / FEA
- Steel Design
- Report Generation
- Foundation Design

Target Audience

- B Tech. Students

Content Structure:

Chapter 1	Introduction to STAAD.Pro® V8i	3 hours
Chapter 2	Model Generation and Editing	3 hours
Chapter 3	Introduction to Loading	4 hours
Chapter 4	Automatic Load Generation	4 hours
Chapter 5	Concrete Design	6 hours
Chapter 6	Seismology	5 hours
Chapter 7	FEM / FEA	4 hours
Chapter 8	Steel Design	4 hours
Chapter 9	Report Generation	4 hours
Chapter 10	Foundation Design	3 hours