

Consulting and Training | Reach New Heights

Course Name

Advanced Structural Analysis

Sector Name

Civil Engineering

Document Type

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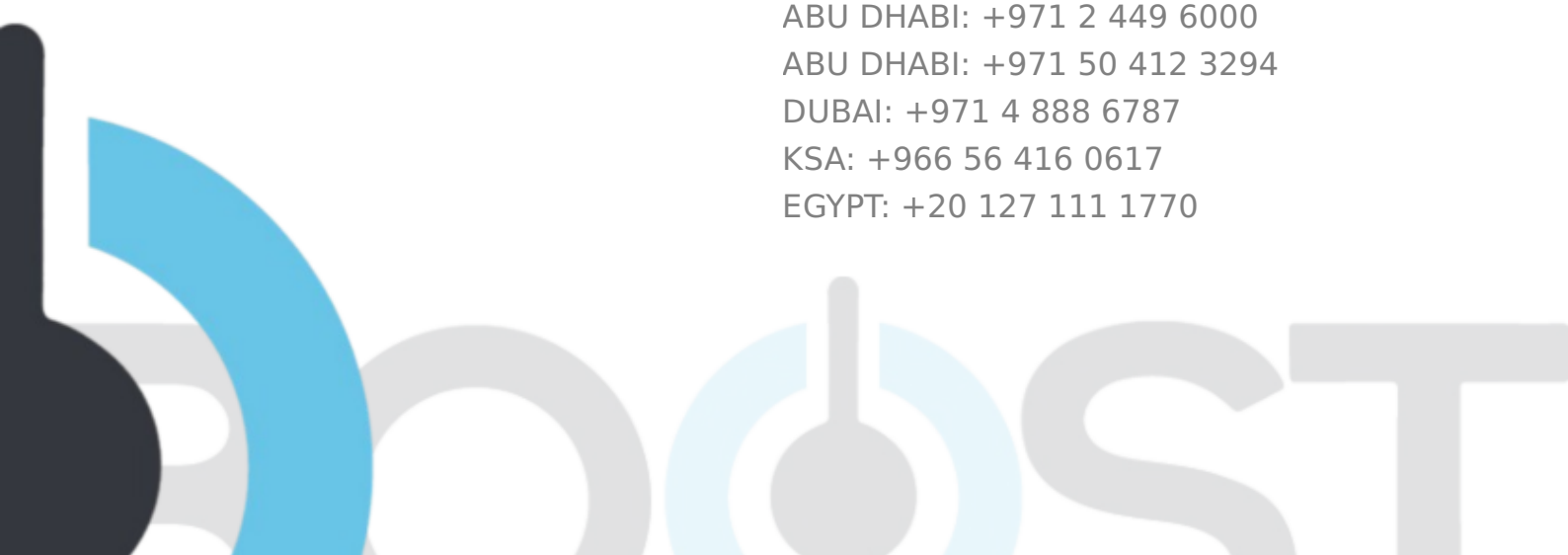
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Advanced Structural Analysis

Course Introduction

In modern civil and structural engineering projects, accurate structural analysis and design evaluation are essential to ensure safety, reliability, and long-term structural performance. The Advanced Structural Analysis training program provides engineers and technical professionals with the advanced analytical methods required to evaluate complex structures and support informed engineering decisions in construction and infrastructure projects.

This corporate training course focuses on advanced techniques used in structural modeling, load analysis, structural stability assessment, and structural behavior evaluation under various loading conditions. Participants will gain deeper insights into how structures respond to dynamic loads, environmental forces, and operational stresses, enabling them to improve structural design accuracy and performance.

The program also introduces modern engineering approaches for analyzing steel structures, reinforced concrete systems, and large-scale infrastructure projects. By combining theoretical concepts with practical engineering applications, participants will strengthen their ability to interpret structural results, optimize structural designs, and mitigate potential structural risks.

Through industry-based case studies and practical analysis methods, this training equips engineering professionals with the knowledge needed to enhance structural integrity, construction safety, and engineering project efficiency, ensuring that complex structures meet both performance and safety standards.

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Target Audience

- ✓ Civil engineers.
- ✓ Experienced Civil Engineers Seeking Professional Development
- ✓ Architects and Urban Planners
- ✓ Entrepreneurs in the Construction Industry

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Learning Objectives

- ✓ Gain a comprehensive understanding of the practical applications of advanced topics in structural engineering
- ✓ Design connections using Steel Designer
- ✓ Use the software more productively
- ✓ Apply RC Designer to design reinforced concrete
- ✓ Load a model to analyze & display structural problems
- ✓ Use Time History analysis for seismic loads, machine vibration, random excitation & blast loading

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Course Outline

✓ DAY 01

Basic Theoretical Understanding:

- ✓ Introduction to the present form of STAAD Pro training and Interaction with engineers to identify the proper need
- ✓ STAAD.Pro in general - Analysis & Design capabilities
- ✓ Clarifications on useful topics

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Course Outline

✓ Day 02

Using The Graphical User Interface To Generate The Geometry (Pre-processor):

- ✓ The general STAAD Pro course environment
- ✓ Short discussion on plane frames, space frames, beams, trusses, etc.
- ✓ Using the drawing tools for creating nodes & beams. Generation methods such as copying /mirroring, rotating. Using spreadsheets.
- ✓ Tools for visualization of the model - panning, zooming, viewing from various angles
- ✓ angles, using multiple views and windows, and renumbering entities.
- ✓ Examining the tools for checking structural integrity.
- ✓ Understanding the STAAD input file using the STAAD editor.
- ✓ **Tutorial problem:** Generating models using the Structure Wizard.
- ✓ Steel Design
- ✓ The Staad Pro training gives an idea about using the graphical user interface to generate the geometry or preprocessor.

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Course Outline

✓ Day 03

Using The Graphical User Interface To Generate A Complete Staad Model (Pre-processor):

- ✓ Building a truss model using the drawing tools and Structure Wizard
- ✓ Creating groups.
- ✓ Understanding the various property types, the steel section database.

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Course Outline

✓ Day 04

Creating and assigning properties from steel tables.

- ✓ Material constants.
- ✓ Understanding beta angles, local vs. global axis, visualization using 3D diagrams.
- ✓ Specifications such as member releases, member offsets, tension only/ compression only members, cables, etc.
- ✓ Understanding and creating various support types.

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Advanced Structural Analysis

Course Outline

✓ Day 05

Understanding and specifying various primary load types.

- ✓ Creating Load combinations.
- ✓ Performing a general elastic analysis.
- ✓ Concrete Design
- ✓ The Staad Pro training provides the graphical user interface to generate a complete Staad model ideas

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Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
Sept. 28, 2026	Oct. 2, 2026	5 days	4250.00 \$	UAE , Dubai
April 5, 2027	April 9, 2027	5 days	5950.00 \$	switzerland , Geneva
Nov. 16, 2026	Nov. 20, 2026	5 days	4250.00 \$	UAE , Dubai
May 10, 2027	May 14, 2027	5 days	4250.00 \$	UAE , Dubai

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