Advanced Analysis of Staad Pro Workshop Training program

Course Description

This course provides a precise look over STAAD Pro Design of sections (both concrete design and steel design). It demonstrates the steps to be followed to produce structural analysis and design of any type of buildings under any loading conditions.

At the completion of this course, the trainee will be able to:

- Understand the basic concept of different design codes.
- Understand how the multipurpose finite element programs conduct the structural analysis.
- Understand STAAD Pro element library
- Understand STAAD Pro way of pre processing some special structures.
- Defining the special Load Systems such as wind, earthquake, dynamic and hydraulic.
- Analyzing your Model using the appropriate Analysis method.
- Check the safety of the proposed steel sections to be used in both plane and space frames.
- Design the required steel sections to be used in both plane and space frames.
- Check the safety of the proposed reinforced concrete sections to be used in both plane and space frames.
- Design the required reinforced concrete sections to be used in both plane and space frames.

Course Objective

This short course is intended to overview the structural analysis and design of both steel structures and reinforced concrete structures by STAAD Pro 2005. The course may be attended by civil engineers involved in design who completed the first and second courses. Each participant may draw on the elements of the course that most complement his area of interest and practice.

For those engineers with limited analysis experience, the course will provide ample illustration of real structures that may assist the designer to understand STAAD Pro and apply it on different types of buildings.

The wide range of issues to be discussed, revolve around the use of STAAD Pro in structural Analysis and design of both steel and reinforced concrete structures. The examples to be used would vary from simple to complicated structures from both steel and concrete structures. Throughout the course, the instructor shall start to review the first and second courses

to allow ensuring the full participation and comprehension of all attendants, bearing in mind variations in background from education to practice.

Course Certificate

BTS certificate will be issued to all attendees completing minimum of 75% of the total tuition hours of the course.

Who should attend?

This course is intended for engineers who are working in the design field of Steel and concrete structure, engineers will learn fast and better techniques For building and checking complex models due to deferent load types they Will learn how to prepare complete design by using international codes and Standards such as AISC for Steel structures and ACI for Concrete sections With detailed output calculation sheet.

Course Outline

All topics will be explained by examples produced by the instructor; the attendees will be able to apply the examples during the course period.

- Introduction to STAAD.Pro
- Model Generation Using The Pro-processor
- Building The Structure Geometry, Visualization and Structure Integrity, Checking tools.
- Modeling By Using Structure Wizard.
- Modeling Beams, Columns, Slabs, Mat Foundation, Concrete and Steel Tanks.
- Create Parametric Models For Auto Meshing And Slab Openings.
- Assigning Properties, Members and Element Orientation, Material, connections information
- Loading types, Load Cases and Automatic Load Combinations.
- Member Specification, Releases, Tension Only, Compression Only And Member Cables.
- Troubleshooting Modeling Problems.
- Viewing and Validation The Analysis Results, Bending Moment,
- Shear forces, Normal Forces, Displacement, Supports Reaction, Plate Stresses, and Soil Pressure.
- Zero Stiffness Condition and Instabilities.
- Load Generation for Wind Loads.
- Load Generation for Vehicle loads.
- Seismic Analysis Using Static Equivalent Method Using UBC and IBC.

- Time History Analysis.
- Response Spectrum Analysis.
- Structure Dynamics, Mode Shapes.
- Creating Reports for the Analysis Results.
- Design Of Steel Structure, Optimization, Material Take off.
- Design of Concrete Beams, Columns, Slabs and Foundation.
- Physical Beam Design of Steel Structure and Connections and Detailed Calculation Sheet.
- Physical Beams, Columns of Concrete Structures and Detailed
- Calculation Sheet.