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Course: Bentley STAAD.Pro V8i

Course Description

This course covers the basics of Bentley STAAD.Pro V8i, with an insight on the use of conceptual design tool. The main emphasis in this course is laid on structural modeling and analyses. You will be introduced to the modeling techniques, structural loads, supports, properties, and concepts of analyses as they relates to the structural stability.

Class and Lab hours:

30 (20 Theory, 10 Lab)

Prerequisite:

Need to be a civil/structural engineer /technologists with basic knowledge of Structural mechanics.

Course Objectives

Upon completion of the course, trainees/students will be able to:

1. *Understand structural modeling techniques*
2. *Define material constants and section properties*
3. *Create and assign specifications and supports*
4. *Create and assign loads*
5. *Perform analyses and create reports*

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Detailed Course Outline

Unit Heading	*Unit Outcomes*	*Unit Topics*
1. Starting with Bentley STAAD.Pro V8i	*The basics of Bentley STAAD.Pro V8i* *Bentley STAAD.Pro V8i interface*	*Introducing to Bentley STAAD.Pro V8i* *Introducing to Structural Analysis* *Understanding the role of structural analysis in Civil Engineering* *Understanding the types of structures* *Learning coordinate systems* *Learning sign conventions*
2. Working with geometry tools	*Model generation (structural geometry)*	*Using STAAD Editor* *Using Snap/Node Beam tool* *Using Structure Wizard*
3. Model Optimization	*Properties and specifications*	*Creating and assigning material constants* *Creating and assigning properties* *Creating and assigning supports* *Creating and assigning node, beam and plate specifications*
4. Structural Loads	*Creating, Defining and assigning the structural loads*	*Creating primary load cases* *Defining seismic loads* *Defining wind loads* *Defining moving loads* *Creating load combinations* *Creating auto load combinations*
5. Reviewing Structures	*Analyze the results.*	*Understanding the structural analysis methods* *Pre-print and Post-print analysis commands* *Performing Analysis* *Viewing Results* *Exploring STAAD output file* *SFD, BMD, Deflections* *Creating Report*
6. Designing Structures	*Structural design of its elements*	*Creating the concrete Design* *Creating the Beam and Column Design as per IS 456/13920* *Understanding the RC Designer* *Creating the Steel Design as per IS 800*

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7. Additional designing of structural elements	*Using Spreadsheets*	*Designing one-way and two-way slabs* *Designing of isolated and combined footings*
8. Projects	*G+6 commercial building* *View structural drawings*	*Modeling the structural geometry* *Assigning supports* *Assigning properties* *Assigning loads* *Analyzing the structural geometry* *Designing the structural elements* *Creating report*
9. Reviewing IS codes	*Introduction to IS 456, IS 800, IS 875, IS 1893*	*Knowing the parameters for designing structural elements* *Knowing the parameters for generating seismic and wind load* *Calculating dead and imposed loads*

Evaluation:

There will be one exam that every trainee/student must pass with at least 75% or more to get a certificate of completion from BIMNCAD.

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