

Training & Certification Program in Civil & Structural Engineering

Overview:

- Introduction to industry and industrial systems e.g. Refinery, Petrochemical, Chemical, Power, Energy, Pharmaceutical etc.
- Role of civil engineers in various fields.
- Inputs from various departments and output.
- Concept of Analysis and Loading Calculations.
- Concrete Structure Design with relevant codes & standards. Steel structure design with relevant codes & standards.
- Equipment supporting structures and foundations.
- Pipe Racks and Sleepers.
- General Civil Works - Roads, Drains, CRWS (Contaminated Rain Water Sewer), OWS (Oily Water Sewer), Paving, Dyke wall, Tank Farm Area, Boundary wall, fence, gate, Local support and platforms.
- Special Facilities - Cooling Tower, Flare Stack, Chimney.
- Computer Aided Analysis and Design.

Module Details

Basics of Structural Engineering

- Design of RCC Beams, Columns and Slabs
- Overhead Tank Design
- Ductile Detailing
- Concrete Chimneys
- Staircase Design
- Steel Beam & Column Design
- Plate Girder
- Connection Design
- Base Plate Design
- Portal Frames and Bracing Design
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- Storm Water Drains
- Soil Mechanics
- Footing Raft Design
- Pile Foundations
- Equipment Foundation Under Vibrating Type
- Underground Water Tanks

Analysis & Design of Structures

- Coordinate Systems
- Type of Structures
- Methods of Model Creation
- Sequence of Input File
- General Commands
- Joint Coordinates Specification

- Member, Element Incidences Specification
- Group Definition

- Member, Element Property Specification
- Load Combination, Analysis Specification

Steel Frame Connection

- Setup Phase I (Job Options)
- Modeling Phase I (Beams And Columns)
- Modeling Tools
- Modeling Phase II
- Connections
- Material Operations
- Setup Phase II
- Drawing Editor
- Parametric Modeling

2D & 3D Modeling Structures

- Create Project, Model & Drawing File
- Copy, Delete & Open Model
- Frame Work Plus Manager
- Attach & Detach Model
- Preference Editor, Section Library
- Compress Frame Work Plus Database
- Verify Model
- Select Filter Setting
- Member Attributes, Orientation
- Create, Set, List, Drop, Modify View

- Freeze View & Update Frozen, Regenerate
- Place Linear Members
- Place 3D Solids
- Modify, Manipulate, Cutbacks
- Linear Material Report
- Review & Locate Elements
- Create User Section Table

3D Structural Design

- Working with Members, Splitting Members
- Importing and Exporting Structure
- Working with Slabs, Cutting Openings
- Managing Equipment Foundations
- Sketching in 3-D