

## Structural Design for Non-Structural Engineers



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Technology Training that works



Training Course :

## Structural Design for non structural Engineers

Training Course For One Week In

Thailand , Bangkok , Grande Centre  
Point Hotel Ploenchit

Which Be Held As Under Details :



**Abar Solutions Petroleum Consultancy Invite Your Employee To Participate With Us In Special Training Course As Under Details :**

Course Name		Structural Design for non structural Engineers			
Code	Period	Language	Start	End	Location
CE 043	5 Days	English	07/08/2017	11/08/2017	Thailand , Bangkok , Grande Centre Point Hotel Ploenchit
			04/09/2017	08/09/2017	
			09/10/2017	13/10/2017	
			13/11/2017	17/11/2017	
			18/12/2017	22/12/2017	
			15/01/2018	19/01/2018	
			12/02/2018	16/02/2018	
			12/03/2018	16/03/2018	
			23/04/2018	27/04/2018	
			14/05/2018	18/05/2018	
			11/06/2018	15/06/2018	
09/07/2018	13/07/2018				
<p align="center">** The Fees Includes : Lecturer , Training Material , Training Room With One Coffee Break Daily , Certificate Of Attendance In Last Day Training Course **</p>					

**Course Description**

⇒ Construction is the largest industry in the world and anything constructed needs to be designed first. Structural Engineering deals with the analysis and design aspects, the basic purpose of which is to ensure a safe, functional and economical structure. While designing, the designer constantly interacts with specialists like architects, operational managers, etc. Once the design is finalized, the implementation takes involvement of people to handle aspects like statutory approvals, planning, quality assurance, material

procurement, etc. The entire exercise can be undertaken in a highly coordinated way if everyone involved understands the 'project language', which is a combination of designs and specifications. To understand the language fully, it is necessary to appreciate the principles of structural analysis and design and a course on this topic comes in handy here. Participants of this workshop will gain a basic knowledge of structural engineering that includes principles of analysis of structures and their application, behavior of materials under loading, selection of construction materials and design fundamentals for RCC and steel structures. The emphasis has been kept on the determination of nature and quantum of stress Developed under loads and the way structures offer resistance to it. Being the most widely used construction materials, RCC and steel has been covered in detail though masonry and timber have also been described briefly.

### Course Objectives

- ⇒ Fully understand the role of the structural engineer
- ⇒ Comprehend the behavior of structural members under loading
- ⇒ Understand the concept of stress functions like tension, Compression, shear and bending
- ⇒ Use the basic concepts for analysis of statically determinate and indeterminate structures
- ⇒ Analyze deformation of members under loading
- ⇒ Understand the significance of material properties in design
- ⇒ Undertake basic design of Reinforced Cement Concrete Structures
- ⇒ Undertake basic design of Steel Structures
- ⇒ Undertake basic design of Masonry & Timber Structural Members
- ⇒ Building Inspectors
- ⇒ Project Managers
- ⇒ Construction Supervisors
- ⇒ Municipal Officials
- ⇒ Architects

- ⇒ Quantity Surveyors
- ⇒ Insurance Surveyors
- ⇒ Concrete Technologists
- ⇒ Reinforcement Detailers
- ⇒ Structural Fabricators
- ⇒ Building Maintenance Personnel
- ⇒ Structural Rehabilitation Staff

### Course Content & Outlines

#### ⇒ **INTRODUCTION TO STRUCTURAL ENGINEERING PRINCIPLES OF STRENGTH OF MATERIAL**

- Theory of elasticity
- Stress-strain characteristics
- Sectional properties
- Deflection & deformation

#### ⇒ **STRUCTURAL ANALYSIS**

- Principle of mechanics
- Determinate & indeterminate structures
- Determination of stress functions (direct, bending & shear stresses)
- Analysis of statically determinate structures
- Analysis of statically indeterminate structures
- Analysis of deformation under loading

#### ⇒ **DESIGN PHILOSOPHIES**

- Material behavior under stress
- Working stress design
- Limit state design
- Loads

#### ⇒ **DESIGN PROCEDURE OF REINFORCED CEMENT CONCRETE (RCC) STRUCTURES**

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- Material & components
- Stress behavior
- Ultimate & permissible stresses
- Design of beams & slabs
- Design of walls & columns
- Design of frames
- Prestressed concrete design

⇒ **DESIGN PROCEDURE OF STEEL STRUCTURES**

- Materials & properties
- Stress behavior
- Methods & design of fastenings
- Design of beams
- Design of columns & struts
- Design of tension members
- Design of trusses
- Design of built up sections
- Limit state design

⇒ **DESIGN OF MASONRY & WOODEN STRUCTURES**

- Properties of masonry
- Design of walls
- Design of columns
- Construction of arches
- Material & properties of wood
- Preservation methods
- Permissible stresses
- Design of columns & beams

⇒ **SUMMARY, OPEN FORUM & CLOSING**