

## **The Construction Industry Overview**

### **Training program**

#### **Introduction:**

The construction industry is the largest industry in the world. It is more of a service than a manufacturing industry. Growth in this industry in fact is an indicator of the economic conditions of a country. This is because the construction industry consumes a wide employment circle of labor. While the manufacturing industry exhibit high-quality products, timelines of service delivery, reasonable cost of service, and low failure rates, the construction industry, on the other hand, is generally the opposite. Most projects exhibit cost overruns, time extensions, and conflicts among parties.

Construction project management is a relatively young field. However, its impact has been quite remarkable. It has become an important practice for improving the efficiency of construction operations around the world. This course deals with some topics and tools of the large field of project management. This course is dedicated mainly to undergraduate engineering students, especially Civil Engineering personnel where most of the applications are presented in the civil engineering field. It provides the candidate with the main knowledge to manage a construction project from preliminary stages to handover.

#### **The course will shed light on:**

- An introduction to the construction industry
- Methods of contract procurement
- Construction documents
- Tendering, bidding and awarding of contracts
- Principles of contract law
- Risk management
- Project completion
- Role of construction associations

#### **Who Should Attend?**

Civil Engineers, Engineers, Consultants, New Graduates.

## Course Objectives:

By the end of this course delegates will be able to:

- Manage people, equipment and money
- Schedule and plan
- Lead projects and teams
- Understand and apply relevant legislation
- Learn about finance and contract pricing operations
- Make decisions
- Learn about project resources management

## Course Outline:

### Introduction

- The Need for Project Management
- The Construction Project
- The Project Scope and Goals
- The Project Life-Cycle
- Major Types of Construction Projects

### Contract Strategy

- What is a Contract
- Selection of Contract Type
- Project Delivery Methods
- Types of Contracts
- Selecting the Contractor
- Sub-Contracting

### Project Planning

- Project Planning Steps
- Estimating Activity Duration and Direct Cost

### Project Scheduling

- The Critical Path Method
- Time-Scaled Diagrams
- Time-Scaled Diagrams
- Criticisms to Network Techniques

## Resources Management

- Resource Definition
- Resource Management
- Resource Allocation
- Resource Aggregation (Loading)
- Resource Leveling (Smoothing)
- Scheduling with Limited Resource

## Project Time-Cost Trade-Off

- Time-Cost Trade-Off
- Activity Time-Cost Relationship
- Project Time-Cost Relationship
- Shortening Project Duration

## Project Finance & Contract Pricing

- Contract Cash Flow
- Project Cash Flow
- Discounted Cash Flow
- Finalizing a Tender Price
- Pricing Policy

## Project Control

- Problems that may Arise During Construction
- Schedule Updating
- Delays Analysis

## Case Studies