



# PMP078

## Construction Technical Skills and Managing Consultants

## Course Introduction:

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Imagine increasing productivity, reducing waste and improving customer satisfaction by developing a process for effectively solving problems and decision making. These benefits and many others are the excellent reasons to learn the creative problem solving techniques outlined and build a toolkit for solving problems and decision making that form part of everyday life in today's organization.

The objective of this intensive course is to provide participants with technical knowledge and practical training on the methodologies and tools of problem solving and Decision Making. The course will focus on developing and upgrading diagnostic problem skills. The course will also emphasize the models and processes of decision making.

This Program offers an extensive training on Dynamics of Leadership. It covers Leadership Dimensions, Skills and Styles, Building Followers, Performance Management including concepts and techniques. This workshop will provide the most comprehensive training on leadership and managerial effectiveness in Future organizations with practical suggestions for improving leadership skills. It introduces The Nature of Leadership, The Nature of Managerial Work, Perspectives on Effective Leadership Behavior, Participative Leadership, Delegation, and Empowerment, Managerial Traits and Skills Theories of Effective Leadership, Leading Change in Organizations, Leadership in Teams and Decision Groups, Strategic Leadership by Top Executives and Developing Leadership Skills.

It explains what makes a leader, the practices and commitments of effective leadership, how to shape organizational excellence, which global competencies are critical to success today and how to gain personal mastery of your own leadership including Interpersonal Skills, Communication, Business Ethics and Multi Culture. Construction projects, consultants and contractors have to be managed and supervised daily by good systems and experienced and qualified construction client representative engineers. The course is primarily aimed at people already working in a supervisory or management role within the construction industry. To achieve these qualifications, supervisors or managers have to provide satisfactory evidence of their management skills, as well as their technical knowledge and competence in the workplace and ability in supervising or managing a construction operation.

## Course Objectives:

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**Upon successful completion of this course, the delegates will be able to:**

- ✓ Manage projects, consultants and contractors
- ✓ Supervise projects, consultants and contractors
- ✓ Organize work operations and activities
- ✓ Organize resources for the work

- ✓ Monitor and supervise work operations and activities
- ✓ Implement health and safety in the workplace
- ✓ Maintain team and individual performance
- ✓ Establish working relationships
- ✓ Plan and implement project maintenance
- ✓ Face challenges in moving to supervision
- ✓ Build dependable working relationships
- ✓ Increase labor productivity and morale
- ✓ Avoid claims and legal problems
- ✓ Communicate and lead effectively
- ✓ Balance managerial skills with technical skills
- ✓ Promote team performance
- ✓ Increase skill sets in Managing and Supervising Projects, Consultants and Contractors
- ✓ Increase their sense of Professionalism
- ✓ Increase their Knowledge of Advanced Techniques of Managing and Supervising Projects, Consultants and Contractors
- ✓ Increase their ability to lead successful construction sites
- ✓ Increase recognition by the organization due to improved performance

## Who Should Attend?

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Top Leaders, Top Management, Human Resources Management, professionals, and any person who is looking for the best techniques to solve any problems related to their works and who is admiring to make the most efficient decisions to achieve the best desired objectives

## Course Outline:

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### Day 1:

#### **INTRODUCTION TO CONSTRUCTION INDUSTRY:**

- INTRODUCTION
- THE CONSTRUCTION INDUSTRY
- THE CONSTRUCTION PROJECT
- SELECTION OF PROFESSIONAL SERVICES
- CONSTRUCTION CONTRACTORS
- LEGAL AND REGULATORY REQUIREMENTS
- THE PROJECT LIFE CYCLE
- PROJECT CONSTRUCTION CONTRACTS AND CONTRACTORS SELECTION METHODS
- MANAGEMENT DURING THE DESIGN PHASE

- MANAGEMENT OF FIELD CONSTRUCTION
- THE PROJECT MANAGER
- NEED FOR PROJECT MANAGEMENT
- MANAGEMENT PROCEDURES

## **DEVELOPING THE SUPERVISORY SKILLS IN THE CONSTRUCTION PROJECTS**

- CHALLENGES IN MOVING TO SUPERVISION
- BUILD DEPENDABLE WORKING RELATIONSHIPS
- INCREASE WORKER PRODUCTIVITY
- ENCOURAGE LABORS INITIATIVE
- AVOID COMPLAINTS AND LEGAL PROBLEMS
- INCREASE COMMUNICATION AND LEADERSHIP SKILLS
- THE IMPORTANCE OF BALANCING MANAGERIAL SKILLS WITH TECHNICAL SKILLS
- PROMOTING OUTSTANDING TEAM PERFORMANCE
- HOW TO MEDIATE DISPUTES BETWEEN LABORS
- PLANNING
- PHYSICAL RESOURCE MANAGEMENT
- IMPLEMENTING
- MONITORING AND CONTROL
- MANAGING TEAMS AND INDIVIDUALS
- IMPLEMENTING
- MONITORING AND CONTROL
- MANAGING TEAMS AND INDIVIDUALS

### **Day 2:**

#### **A. Managing Construction Projects**

### **PROJECT COST ESTIMATING**

- INTRODUCTION TO COST ESTIMATING
- ROLE AND QUALIFICATIONS OF COST ENGINEER
- TYPES OF COST ESTIMATING
- THE FINAL PROJECT COST ESTIMATES
- PROJECT BUDGETING
- UNBALANCED BIDS
- SETTING OF A COST ESTIMATE MODEL
- COST ESTIMATE COMPUTER PROGRAM

### **THE PROJECT COST CONTROL**

- OBJECTIVES OF COST CONTROL

- PROJECT COST CONTROL
- DATA FOR ESTIMATING
- PROJECT COST CODE
- USAGE OF PROJECT COST CODE
- PROJECT COST ACCOUNTING
- LABOR AND EQUIPMENT COSTS
- COST ACCOUNTING REPORTS
- LABOR TIME REPORTING
- TIME CARD PREPARATION
- MEASUREMENT OF WORK QUANTITIES
- WORK QUANTITIES FROM NETWORK ACTIVITIES
- WEEKLY LABOR COST REPORT
- WEEKLY LABOR COST REPORT
- COST RECORDS AND REPORTS
- EQUIPMENT COST ACCOUNTING
- CHARGING EQUIPMENT TO THE PROJECT
- EQUIPMENT TIME REPORTS
- WEEKLY EQUIPMENT COST REPORT
- SPECIAL ASPECTS OF EQUIPMENT CHARGES
- CHARGING EQUIPMENT TO THE PROJECT
- EQUIPMENT TIME REPORTS
- WEEKLY EQUIPMENT COST REPORT
- SPECIAL ASPECTS OF EQUIPMENT CHARGES
- MONTHLY COST FORECAST
- TIME-COST ENVELOPE
- SPECIAL COST ACCOUNTING PROBLEMS
- PRODUCTION COST REDUCTION
- INFORMATION FOR ESTIMATING
- COMPUTER APPLICATION
- ACCURACY OF ESTIMATING

## **CONSTRUCTION PROJECT PLANNING**

- THE CPM PROCEDURE
- THE PLANNING PHASE
- JOB ACTIVITIES
- JOB LOGIC
- RESTRAINTS
- PRECEDENCE NOTATION
- THE PRECEDENCE DIAGRAM

- LAG RELATIONSHIPS
- PRECEDENCE DIAGRAM FOR HIGHWAY BRIDGE
- REPETITIVE OPERATIONS
- NETWORK INTERFACES
- THE MASTER NETWORK
- SUBNETWORKS
- DRAWING THE DIAGRAM

## **CONSTRUCTION PROJECT SCHEDULING**

- SCHEDULING PROCEDURE
- ACTIVITY TIMES
- RULES FOR ESTIMATING ACTIVITY DURATIONS
- ESTIMATING ACTIVITY DURATIONS
- TIME CONTINGENCY
- NETWORK COMPUTATIONS
- EARLY ACTIVITY TIMES
- PROJECT DURATION
- LATE ACTIVITY TIMES
- TOTAL FLOAT
- EARLY ACTIVITY TIMES
- PROJECT DURATION
- LATE ACTIVITY TIMES
- TOTAL FLOAT
- THE CRITICAL PATH
- FREE FLOAT
- ACTIVITY TIMES IN TABULAR FORMAT
- FLOAT PATHS
- EARLY START SCHEDULE
- ACTIVITIES AND CALENDAR DATES
- SORTS
- LAGS BETWEEN ACTIVITIES
- HAMMOCK ACTIVITY
- MILESTIONS
- TIME-SCALED NETWORKS
- BAR CHARTS

## **PROJECT TIME REDUCTION**

- TIME SCHEDULE ADJUSTMENTS
- NEED FOR TIME REDUCTION

- GENERAL TIME REDUCTION PROCEDURE
- SHORTENING THE LONGEST TIME PATH
- PROJECT DIRECT COSTS
- VARIATION OF ACTIVITY DIRECT COST WITH TIME
- PROJECT INDIRECT COSTS
- TIME-COST TRADEOFF BY COMPUTER
- RESTUDY OF CRITICAL ACTIVITY DURATIONS
- RESTUDY OF PROJECT PLAN
- CRITICAL ACTIVITIES IN PARALLEL
- SUBDIVISION OF CRITICAL ACTIVITIES
- SUBCONTRACTING
- THE CRITICAL PATH METHOD (CPM) OF TIME-COST TRADE-OFFS

### **PROJECT TIME MANAGEMENT**

- THE TIME MANAGEMENT SYSTEM
- ASPECTS OF TIME MANAGEMENT
- PROGRESS MEASUREMENT
- ASPECTS OF TIME MANAGEMENT
- PROGRESS MEASUREMENT
- HIGHWAY BRIDGE AS OF JULY 14
- JULY 21 STATUS OF HIGHWAY BRIDGE
- PROGRESS ANALYSIS
- CORRECTIVE ACTION
- NETWORK UPDATING
- PROJECT PROGRESS CURVES

### **PROJECT FINANCIAL MANAGEMENT**

- FINANCIAL CONTROL
- PROGRESS PAYMENTS
- PAYMENT REQUESTS FOR UNIT-PRICE CONTRACTS
- SCHEDULE OF FOR PAYMENTS BY OWNER-UNIT-PRICE CONTRACT
- FINAL PAYMENT
- CASH FLOW
- CASH DISBURSEMENT FORECASTS
- CASH INCOME FORECASTS
- CONSTRUCTION FINANCING FOR CONTRACTORS
- EFFECTS OF OTHER FACTORS ON A CONTRACTOR'S PROFITS

### **QUALITY MANAGEMENT PLANS**



- QUALITY: AN OVERVIEW
- QUALITY CONTROL (QC
- QUALITY ASSURANCE (QA
- TOTAL QUALITY MANAGEMENT
- TOTAL QUALITY MANAGEMENT
- PRE-DESIGN PHASE
- DESIGN PHASE
- TENDERING PHASE
- CONSTRUCTION PHASE
- POST-CONSTRUCTION PHASE
- OBJECTIVES OF QUALITY PLAN
- METHODOLOGY OF QUALITY PLAN
- ANALYSIS AND EVALUATION
- EVALUATION MATRIX
- TOTAL QUALITY CONTROL
- QUALITY CONTROL BY STATISTICAL METHODS
- STATISTICAL QUALITY CONTROL WITH SAMPLING BY ATTRIBUTES
- EVALUATION MATRIX
- TOTAL QUALITY CONTROL
- QUALITY CONTROL BY STATISTICAL METHODS
- STATISTICAL QUALITY CONTROL WITH SAMPLING BY ATTRIBUTES
- STATISTICAL QUALITY CONTROL WITH SAMPLING BY VARIABLES

### Day 3:

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## **B. Managing Construction Consultants**

### **CONSTRUCTION CLAIMS AND DISPUTES**

- INTRODUCTION
- CLAIM DEFINITION
- CLAIMS REASONS AND SOURCES
- VARIOUS TYPES OF CLAIMS
- CONTRACTOR'S CONSTRUCTION CLAIMS AVOIDANCE
- LIFE CYCLE OF CONSTRUCTION CLAIMS
- CASE STUDIES OF CONSTRUCTION CLAIMS

### **VALUE ENGINEERING**

- HISTORY OF VALUE ENGINEERING
- BENEFITS AND APPLICATION OF VALUE ENGINEERING
- VALUE ENGINEERING METHODOLOGY



- SPECIAL TECHNIQUES FOR PROJECT SELECTION
- OTHER VE METHODOLOGIES
- VALUE ENGINEERING PRACTICE
- VALUE ENGINEERING RESULTS

### **KEY PERFORMANCE INDICATORS (KPI's)**

- WHAT IS A "BALANCED SCORECARD"?
- MAKING THE BSC A STRATEGIC TOOL
- HR MEASURES FOR A BSC
- PERFORMANCE MEASUREMENTS
- WHY MEASURE PERFORMANCE
- WHAT TO MEASURE
- HOW TO MEASURE
- FEEDBACK TO SUPPLIERS REGARDING PERFORMANCE
- HOW TO MEASURE
- FEEDBACK TO SUPPLIERS REGARDING PERFORMANCE

### **C. Managing Construction Contractors**

#### **CONTRACT FUNDAMENTALS**

- THE ELEMENTS OF A CONTRACT
- TYPES OF CONTRACTS AND THEIR ADVANTAGES AND DISADVANTAGES
- FORMS OF CONTRACT
- IDENTIFICATION OF CONTRACT TERMS
- TERMS AND CONDITIONS OF CONTRACT

#### **CONSTRUCTION MANAGEMENT SAFETY**

- ORGANIZE WORK OPERATIONS AND ACTIVITIES
- ORGANIZE RESOURCES FOR THE WORK
- MONITOR AND SUPERVISE WORK OPERATIONS AND ACTIVITIES
- MAINTAIN TEAM AND INDIVIDUAL PERFORMANCE
- ESTABLISH WORKING RELATIONSHIPS
- HEALTH AND SAFETY INCLUDING MANAGEMENT OF HEALTH.
- COVERAGE OF ALL REGULATION RELATING TO THE CONSTRUCTION INDUSTRY.
- ACCIDENT PREVENTION, INVESTIGATION AND REPORTING PROCEDURES.
- OCCUPATIONAL HEALTH AND HYGIENE – PERSONAL PROTECTION.
- GENERAL HAZARD IDENTIFICATION AND SAFE WORKING METHODS
- IDENTIFY HAZARDS AND REDUCE RISKS
- OVERVIEW OF SAFETY IN CONSTRUCTION PROJECTS

- DESIGN OF SAFETY PLAN AND FIRE PLAN
- CASE STUDY OF SAFETY PLAN AND FIRE PLAN

#### **Day 4:**

### **D. Supervising Construction Projects**

#### **PROJECT NEGOTIATION**

- INTRODUCTION
- FUNDAMENTAL KNOWLEDGE OF NEGOTIATION
- AGREEMENT / BREACH
- COROLLARIES / RESULTS
- PRINCIPLES AND COROLLARIES ABOUT NEGOTIATION
- FUNDAMENTAL KNOWLEDGE OF NEGOTIATION
- AGREEMENT / BREACH
- COROLLARIES / RESULTS
- PRINCIPLES AND COROLLARIES ABOUT NEGOTIATION (CAUSE – EFFECT)
- "THE NEGOTIATION IS NOT AN EXACT SCIENCE"
- PRINCIPLES AND COROLLARIES ABOUT NEGOTIATION
- NEGOTIATION CHARACTERISTICS
- NEGOTIATION ELEMENTS STUDY IN EMIRATES
- NEGOTIATION ITEMS

#### **ORGANIZING FOR PROJECT MANAGEMENT**

- WHAT IS PROJECT MANAGEMENT?
- TRENDS IN MODERN MANAGEMENT
- STRATEGIC PLANNING AND PROJECT PROGRAMMING
- EFFECTS OF PROJECT RISKS ON ORGANIZATION
- ORGANIZATION OF PROJECT PARTICIPANTS
- TRADITIONAL DESIGNER-CONSTRUCTOR SEQUENCE
- PROFESSIONAL CONSTRUCTION MANAGEMENT
- OWNER-BUILDER OPERATION
- TURNKEY OPERATION
- LEADERSHIP AND MOTIVATION FOR THE PROJECT TEAM
- INTERPERSONAL BEHAVIOR IN PROJECT ORGANIZATIONS
- PERCEPTIONS OF OWNERS AND CONTRACTORS

### **E. Supervising Construction Consultants**

#### **DRAWINGS AND SPECIFICATIONS**

- THE ARCHITECT-ENGINEER
- SERVICES PROVIDED BY THE ARCHITECT-ENGINEER
- PROJECT DESCRIPTION
- THE DRAWINGS
- STANDARDIZED DRAWINGS
- THE SPECIFICATIONS
- WORK AND MATERIAL SPECIFICATIONS
- SPECIFICATIONS DIVISIONS
- THE GENERAL CONDITIONS
- SUPPLEMENTARY CONDITIONS
- THE TECHNICAL SPECIFICATIONS
- SPECIFICATIONS DIVISIONS
- THE GENERAL CONDITIONS
- SUPPLEMENTARY CONDITIONS
- THE TECHNICAL SPECIFICATIONS
- PERFORMANCE SPECIFICATIONS
- DESIGN SPECIFICATION
- MATERIAL AND PRODUCT STANDARDS
- CLOSED SPECIFICATIONS
- OPEN SPECIFICATIONS
- OTHER MATERIAL SPECIFICATION TYPES
- STANDARD SPECIFICATIONS

## **CONSTRUCTION PRICING**

- PRICING FOR CONSTRUCTED FACILITIES
- RELATIVE COSTS OF CONSTRUCTION CONTRACTS
- PRINCIPLES OF COMPETITIVE BIDDING
- PRINCIPLES OF CONTRACT NEGOTIATION

## **METHODS FOR BID EVALUATION**

- CLASSIFICATION OF METHODS FOR CONTRACTORS SELECTION
- EVALUATION OF COMPETITIVE BIDS
- PROPOSED METHODOLOGY FOR CONTRACTOR SELECTION
- PROPOSED METHODOLOGY FOR CONTRACTOR SELECTION
- COMPUTER PROGRAMMING AND IMPLEMENTATION

## **REVIEW OF THE DIFFERENT APPLIED DESIGN MANAGEMENT MODELS FOR CONSTRUCTION PROJECTS:**

- INTRODUCTION

- DESIGN MANAGEMENT VS. CONSTRUCTION MANAGEMENT
- CHARACTERISTICS OF DESIGN MANAGEMENT
- DESIGN MANAGEMENT PHASES
- THINKING TO BUILD A SIMPLE MODEL OF DESIGN
- RESEARCHES REVIEW IN DESIGN MANAGEMENT
- CONVENTIONAL DESIGN PROCESS IN CONSTRUCTION
- PROCESS-PARAMETER-INTERFACE MODEL
- CASE STUDY: DESIGN OF A CONFERENCE ROOM
- DESIGN REVIEWS IN THE CONSTRUCTION PROCESS
- CONCURRENT ENGINEERING APPROACH TO REDUCING DESIGN DELIVERY TIME
- DIFFERENT CASE STUDIES

## **TENDERING PROCEDURES**

- PROJECT STRATEGY
- CONCURRENT ENGINEERING APPROACH TO REDUCING DESIGN DELIVERY TIME
- DIFFERENT CASE STUDIES
- PROJECT STRATEGY
- PREQUALIFICATION OF TENDERERS
- OBTAINING TENDERS
- OPENING OF TENDERS
- EVALUATION OF TENDERS
- AWARD OF CONTRACTS

### **Day 5:**

## **F. Supervising Construction Contractors**

### **CONSTRUCTION EQUIPMENT MANAGEMENT**

- CONSTRUCTION EQUIPMENT SELECTION FACTORS
- COST OF OWNING AND OPERATING CONSTRUCTION EQUIPMENT
- SOURCES OF CONSTRUCTION EQUIPMENT
- ECONOMIC LIFE OF CONSTRUCTION EQUIPMENT
- PRODUCTION CYCLE & OUTPUT

### **CONSTRUCTION LABOR MANAGEMENT**

- PERFORMANCE MEASUREMENTS
- LEVEL OF PERFORMANCE MEASUREMENTS
- SETTING WORTHY STANDARDS
- SETTING IMPROVEMENT PRIORITIES
- PERFORMANCE IMPROVEMENT PHILOSOPHY

- PERFORMANCE ANALYSIS
- WORTH OF PERFORMANCE

## Course Certificate:

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**International Center for Training & Development (ICTD)** will award an internationally recognized certificate(s) for each delegate on completion of training.

## Course Methodology:

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**A variety of methodologies will be used during the course that includes:**

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

## Course Fees:

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**To be advised as per course location.** This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

## Course Timings:

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### Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session