

Master Class on Cost Engineering for Capital Projects

Managing with the Project Cost Worksheet

Course Information

Course theme

Managing with the Project Cost Worksheet

Why to develop your cost engineering skills now!

Africa is at the beginning of a very exciting period in its history as far as infrastructure development is concerned. In comparison to a depressed international economic outlook, Africa is experiencing economic growth partly due to capital projects across the continent focusing on the delivery of infrastructure and the unlocking of natural resources fueled by international investment.

Two main initiatives are driving the demand for skilled cost engineers working in capital projects. The South African National Development Plan 2030 (NDP) and the Program for Infrastructure Delivery (PIDA) has already launched hundreds of high value projects across Africa.

This master class on Cost Engineering for Capital Projects will grow your skills in the tools and techniques used in Cost Estimating, Cost Control, Planning and Scheduling, Project Procurement, Project Accounting and Risk Management.

In this course you will learn how to manage your project around the central theme of the project cost worksheet as a central source of project cost information.

Aim of the course

This master class on Cost Engineering for Capital Projects will grow your skills in the tools and techniques used in Cost Estimating, Cost Control, Planning and Scheduling, Project Procurement, Project Accounting and Risk Management. The inter relationships between these topics will be highlighted and explained.

In this course you will learn how to manage your project around the central theme of the project cost worksheet as a central source of project cost information and how to use the cost worksheet as a project decision making tool.

The course will provide students with an understanding of the AACEI's cost engineering certification structures and requirements for exam preparation.

Who should attend?

This master class is aimed at Capital Project team members who carry responsibility for cost effective design and delivery of capital projects related to infrastructure and resources sectors.

- Project Investors / Owners
- Project Directors
- Project Managers
- Project Engineers
- Cost Estimators
- Cost Controllers
- Planners
- Contracts Administrators
- Buyers
- Project Accountants
- Project Risk Managers
- Document Controllers

A basic understanding of the projects environment is recommended but not mandatory.

Supplementary textbook

Project Management Techniques, College Edition by Rory Burke

ISBN-13: 978-0-9582733-4-3

About the presenter

Werner Maritz has presented skills development training on Cost Engineering for Capital Projects to hundreds of students since identifying the need for this type of skills development in 2008.

He holds a M.Eng from Wits, is a Project Management professional (PMP) and Certified Cost Engineer (CCE). Werner is also a certified Oracle Primavera Implementation consultant, integrating the theory and tools of cost engineering in the Capital Projects environment.

Werner has more than 15 years of experience in project management and controls systems across Natural Resources, Infrastructure, Public Sector and Engineering & Construction industries. He has dedicated the past two years to the implementation of Oracle Primavera applications in EMEA.

The course is presented over a 5 day period covering 9 modules. Each module is augmented by class-room discussion, case studies and typical questions. To ensure active class participation, a limited number of seats are available per session.

Course Fees:

Course fees are R16 000 excl. VAT per delegate for the full 5 day event. All training material are included.

Module 1 - Introduction

- What is cost engineering?
- The project cost worksheet structure
- Introduction to Project Management
- Project management methodologies
- The Project Environment
- The Project Lifecycles and phases
- The Project Organizational Structure
- Project Offices and Project Support Offices
- Project Teams
- Project Leadership
- Project Initiation
- Project Scope Management
- The Work Breakdown Structure
- The Project Code of Accounts
- Project Communication

Module 2 - Economic Analysis

- Enterprise project portfolio management
- Project funding
- Project life cycle
- Payback, ROI, NPV, IRR
- Discount factors
- Asset Depreciation
- Project Cash flow
- Impact on the project cost worksheet

Module 3 - Cost Estimation and Budget Development

- Project code of accounts
- Cost types
- Classes of estimates
- Estimating techniques
- Estimating allowances
- Contingencies
- Escalation
- Basis of estimate document
- Impact on the project cost worksheet
- Estimating tools

Module 4 - Planning and Scheduling Techniques

- Matrix and functional organizational structures
- Work breakdown structure development
- Activity definition and schedule development
- Network diagrams
- The Gantt chart
- PERT Analysis
- Best practice scheduling techniques
- Critical Path Method
- Resource planning
- Procurement planning
- Impact on the project cost worksheet
- Planning and scheduling tools
- 4D & 5D Planning Trends
- Introduction to lean construction planning methods

Module 5 - Project Procurement and Contact Types

- Types of contracts
- Project delivery methods
- Vendor management
- Request for bid / tender
- Adjudication and award
- Request for information (RFI)

- Contract change management
- Dispute resolution
- Goods received vouchers
- Payment certificates
- Accounts payable
- Accounts receivable
- Bonds, Guarantees & Retention
- Warranties
- Materials / inventory management
- Multi-currency project cost control considerations
- Impact on the project cost worksheet
- Procurement and contracts management tools

Module 6 - Project Performance Measurement and Earned Value Management

- EIA 748B overview
- Progress measurement techniques
- Control account and work package plans
- Earned value indicators
- Forecast to complete (FTC) techniques
- Multi-currency cost control
- Impact on the project cost worksheet
- Cost control tools

Module 7 - Project Risk Management

- Risk management framework
- Risk management process
- Qualitative risk management
- Quantitative risk management
- Impact on the project cost worksheet

Module 8 - Documentation and Records Management

- Transmittals
- Submittals
- Registers
- Minutes of meetings
- Action items
- Alerts
- Virtual teams & communication
- Team collaboration tools

Module 9 – AACEI Certification Structures and Requirements