Advanced Project Controls and Performance Monitoring Training Course

Professional Development Training Course Outline

Category	Project Management	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In today's complex and high-stakes project environments, particularly within the dynamic construction and infrastructure sectors of Nairobi, Kenya, robust Project Controls and Performance Monitoring (Advanced) are paramount for achieving predictability, efficiency, and ultimate success. Project Controls and Performance Monitoring (Advanced) Training Course equips professionals with comprehensive methodologies and advanced tools to establish, manage, and optimize sophisticated project control systems for highly complex undertakings. Project controls encompass the processes, procedures, and tools used to plan, track, analyze, and manage project costs, schedule, and scope. While fundamental project controls provide a baseline, advanced performance monitoring goes beyond routine tracking, delving into predictive analytics, forensic analysis, and integrated system management to proactively identify deviations, forecast outcomes, and enable timely, data-driven decision-making. The absence of advanced project controls can lead to significant cost overruns, schedule delays, scope creep, unmanaged risks, and ultimately, project failure, eroding stakeholder confidence and organizational profitability. This course is meticulously designed to equip senior project managers, project control managers, cost engineers, planning & scheduling managers, risk managers, contract managers, and senior quantity surveyors with the expert knowledge and practical methodologies to design, implement, and lead sophisticated project controls functions and advanced performance monitoring systems for large-scale and complex projects. The program focuses on integrated project control frameworks, advanced cost control and forecasting, sophisticated scheduling and earned value management (EVM), risk management integration, digital tools and data analytics for performance monitoring, and forensic analysis and claims support, blending rigorous analytical frameworks with practical, hands-on application, global mega-project case studies (including relevant African and Kenyan infrastructure projects), and interactive project control system design and simulation exercises. Participants will gain the strategic foresight and technical expertise to confidently manage the most intricate aspects of project performance, fostering unparalleled predictability, efficiency, and successful project delivery, thereby securing their position as indispensable leaders in mastering the art and science of advanced project control.

Programme Curriculum

Advanced Project Controls and Performance Monitoring Training Course

Introduction:

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The program focuses on **integrated project control frameworks, advanced cost control and forecasting, sophisticated scheduling and earned value management (EVM), risk management integration, digital tools and data analytics for performance monitoring, and forensic analysis and claims support,** blending **rigorous analytical frameworks with practical, hands-on application, global mega-project case studies (including relevant African and Kenyan infrastructure projects), and interactive project control system design and simulation exercises.** Participants will gain the strategic foresight and technical expertise to confidently manage the most intricate aspects of project performance, fostering unparalleled **predictability, efficiency, and successful project delivery**, thereby securing their position as indispensable leaders in **mastering the art and science of advanced project control.**

Course Objectives

Upon completion of this course, participants will be able to:

1. **Analyze core concepts and strategic responsibilities** of **advanced Project Controls and Performance Monitoring.**
2. **Master sophisticated techniques** for **establishing fully integrated project baselines** (scope, schedule, cost, and resource).
3. **Develop robust methodologies** for **implementing and applying advanced Earned Value Management (EVM)** principles for comprehensive performance measurement.
4. **Implement effective strategies** for **conducting detailed cost control, forecasting (EAC, ETC), and variance analysis** for complex projects.
5. **Manage complex considerations** for **applying advanced scheduling techniques** including probabilistic scheduling and schedule risk analysis.

6. **Apply robust strategies** for **integrating risk management into project control processes** for proactive identification and mitigation.
7. **Understand the deep integration of advanced digital tools and data analytics** for real-time performance monitoring and reporting.
8. **Leverage knowledge of global best practices and lessons learned** in project controls from mega-projects and complex programs.
9. **Optimize strategies for developing and managing a robust Project Controls Organization (PCO)** structure and roles.
10. **Formulate specialized recommendations** for **performing forensic schedule and cost analysis** for dispute resolution and claims support.
11. **Conduct comprehensive assessments** of project performance, identifying trends, deviations, and root causes using advanced techniques.
12. **Navigate challenging situations** such as **managing scope changes, cost escalation, schedule delays, and data integrity issues** in large projects.
13. **Develop a holistic, data-driven, and proactive approach** to **Project Controls and Performance Monitoring (Advanced),** ensuring predictable project outcomes and strategic decision-making.

Target Audience

1. **Senior Project Managers & Program Managers:** Overseeing multiple projects or large, complex initiatives.
2. **Project Controls Managers & Directors:** Leading project controls departments and teams.
3. **Cost Engineers & Estimators (Senior Level):** Specializing in cost control, forecasting, and forensic analysis.
4. **Planning & Scheduling Managers (Senior Level):** Responsible for complex schedule development, analysis, and risk.
5. **Risk Managers:** Seeking to integrate risk analysis deeply into project controls.
6. **Contract Managers & Claims Specialists:** Utilizing project controls data for dispute resolution.
7. **Quantity Surveyors (Senior Level):** Involved in cost planning, value management, and performance analysis.
8. **Engineers & Construction Managers:** Aspiring to leadership roles in project execution with a strong controls foundation.

Course Duration: 10 Days

Course Modules

Module 1: Foundations of Advanced Project Controls

- **Defining Project Controls (Advanced)**: Beyond basics to strategic value addition.
- **Integrated Project Control Frameworks**: Scope, Schedule, Cost, Resource, Risk integration.
- **The Project Controls Maturity Model**: Assessing organizational capabilities.
- **Role of Project Controls in Strategic Decision-Making and Governance**.
- **Establishing the Project Controls Baseline**: The foundation for performance measurement.

Module 2: Advanced Cost Control and Forecasting

- **Cost Estimate Classification System (AACE International)**: Types, accuracy, and confidence levels.
- **Advanced Cost Breakdown Structures (CBS)**: Linking to WBS and organizational structures.
- **Cost Tracking and Reporting**: Capturing actual costs and commitments.

- **Forecasting Techniques**: Estimate at Completion (EAC) and Estimate to Complete (ETC) using various methods.
- **Contingency and Management Reserve Management**: Principles and application.

Module 3: Earned Value Management (EVM) for Complex Projects

- **EVM Core Components Review**: PV, EV, AC.
- **Advanced EVM Metrics**: CPI, SPI, CV, SV, TCPI.
- **Forecasting with EVM**: Using performance factors to predict project completion.
- **Performance Measurement Baselines (PMB)**: Establishing and managing changes.
- **Integrating EVM with Project Lifecycle Phases and Organizational Reporting**.

Module 4: Advanced Scheduling Techniques and Analysis

- **Detailed Network Analysis Review**: Critical Path, Total Float, Free Float.
- **Resource-Loaded and Cost-Loaded Schedules**: Integration for comprehensive tracking.
- **Probabilistic Scheduling (Monte Carlo Simulation)**: Incorporating uncertainty into schedules.
- **Schedule Health Analysis**: Identifying common scheduling flaws and risks.
- **Schedule Performance Indices and Trends**: Using SPI for predictive analysis.

Module 5: Project Risk Management Integration

- **Quantitative Risk Analysis (QRA) for Schedule and Cost**: Monte Carlo simulation for project contingency.
- **Risk Breakdown Structure (RBS) and Risk Register Integration with Controls**.
- **Risk Response Planning and Cost/Schedule Impact Analysis**.
- **Contingency Management and Drawdown Tracking**.
- **Risk-Adjusted Baselines and Performance Monitoring**.

Module 6: Digital Tools and Project Control Software

- **Overview of Advanced Project Control Software**: Primavera P6, EcoSys, SAP-PS (conceptual focus).
- **Data Integration and Interoperability**: Connecting various project systems.
- **Automated Data Collection and Reporting**: Leveraging IoT, sensors, and mobile applications.
- **Dashboards and Visual Analytics for Performance Monitoring**: Designing effective data visualizations.
- **Introduction to Power BI/Tableau for Project Controls Data**.

Module 7: Performance Reporting and Communication

- **Designing Effective Project Performance Reports**: Tailoring to different stakeholder levels (operational, management, executive).
- **Variance Analysis Reporting**: Presenting deviations and root causes clearly.
- **Trend Analysis and Forecasting Presentations**: Communicating future outcomes.
- **Early Warning Indicators (EWIs)**: Proactive identification of potential issues.
- **Communication Protocols and Cadence**: Ensuring timely and relevant information flow.

Module 8: Change Management and Configuration Control

- **Integrated Change Control Process**: Managing scope, schedule, and cost changes.
- **Baseline Management and Re-baselining Criteria**: When and how to adjust baselines.

- **Configuration Management**: Managing project deliverables and documentation versions.
- **Impact Analysis of Changes**: Quantifying the effect of proposed changes on performance.
- **Change Control Boards (CCB)**: Roles and responsibilities in approving changes.

Module 9: Forensic Schedule and Cost Analysis for Claims

- **Purpose of Forensic Analysis**: Dispute resolution, claims support, litigation.
- **Forensic Schedule Analysis Techniques**: As-Planned vs. As-Built, Time Impact Analysis, Critical Path Deviation.
- **Forensic Cost Analysis**: Unraveling cost overruns and identifying responsibility.
- **Documentation and Evidence Management for Claims**.
- **Expert Witness Testimony and Support**.

Module 10: Building a High-Performing Project Controls Organization (PCO)

- **PCO Structure and Roles**: Centralized vs. decentralized models.
- **Competencies and Skill Sets for Advanced Project Controls Professionals**.
- **Processes and Procedures Development**: Standardizing controls practices.
- **Performance Metrics for the PCO Itself**: Measuring the effectiveness of controls.
- **Fostering a Culture of Data-Driven Decision-Making and Continuous Improvement**

Module 11: Case Studies and Practical Application

- **In-depth Analysis of Mega-Project Case Studies**: Lessons learned from major infrastructure or industrial projects (e.g., mega-dams, high-speed rail, large-scale mining projects) focusing on controls challenges and successes.
- **Simulated Project Scenario for Integrated Controls**: Participants work in teams to apply all learned concepts to a complex hypothetical project (e.g., a multi-billion dollar port expansion or new city development in Kenya).
- **Advanced EVM Calculation and Interpretation Workshop**: Hands-on analysis of complex performance data.
- **Schedule Risk Modeling Exercise**: Using tools to run simulations and interpret results.
- **Forensic Analysis Mini-Case**: Analyzing a simplified scenario to identify schedule delays or cost variances.

Training Methodology

This training course will employ a blended learning approach incorporating:

- Interactive lectures and presentations
- Hands-on exercises and case studies
- Individual and group simulation projects
- Discussions and knowledge sharing
- Practical application of simulation software
- Real-world examples and industry best practices

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org **or call** *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now