UNIX Trainers & Consultants
Head Office: Wema Twins Annex, Plot No. 181,
Boko-Bagamoyo Road, P.O. Box 33826, Dar es salaam.
Mob: +255-715-361-880/+255-754-361-880
Email: info@unixtrainers.com; training@unixtrainers.com
Website: www.unixtrainers.com

Effective Planning and Scheduling for Public Sector Project Management

Course Overview

The late delivery of projects has become the scourge of project professionals worldwide. Countless numbers of projects undertaken by organizations in the private and public sectors significantly overrun the project schedule and budget, and as a consequence fail to achieve the organization's financial and strategic objectives, often with sizable increases in costs and substantial financial losses to the organization.

This is due mainly to the failure of many project professionals to successfully apply the tools and techniques of modern project planning, scheduling, and control to their projects.

In addition to the financial losses suffered by the organization, many such projects also fail to deliver the required quality of outcomes intended for the project as a direct consequence of inadequate planning and control.

Course Objectives:

At the end of this course, the participants will be able to:

- Gain knowledge of techniques used in resource planning and control.
- Understand the time-cost trade-offs.
- Identify risk sources and minimize their impact and learn how to sustain project momentum.
- Learn how to administer project documentation and reporting.
- Develop effective performance monitoring and control systems.
- Integrate scope, time, resources and cost management into a dynamic, manageable plan
- Develop project network diagrams for CPM and advanced PERT calculations to identify schedule and cost risks
- Maintain continuous project performance and delivery control
- Accurately estimate and allocate project costs and resources
- Measure, forecast and control project performance by employing earned value techniques
- Compressor accelerates the schedule when required by adverse circumstances
- Manage and mitigate schedule, cost, scope, and resource risks associated with the project
- Develop a line of balance schedules and velocity diagrams for repetitive or recurring work
- Benefit from the financial effects of the learning curve on recurring work
- Develop a project recovery plan for budget and schedule overruns
- Produce clear and concise project progress reports

Course Content:

Unit 1: Project Scope Planning and Definition (Fundamentals)

- Scope Planning
- Work Breakdown Structures (WBS)
- Work Packages
- Statement of Work (SOW) - Technical Baseline
- Scope Execution Plan
- Triple Constraints - Time Cost, Scope
- Project Quality Issues
- Project Risk Analysis
- Project Deliverables
- Resource Requirements

Unit 2: Project Schedule Planning and Critical Path Method:

- Precedence Network Diagramming
- Job Logic Relationship Chart
- Critical Path Analysis
- Project Float Analysis
- Lead and Lag Scheduling
- Activity Duration Estimation
- Milestone Charts
- Gantt Chart - Schedule Baseline
- Project Estimating Processes
- Production and Productivity Planning
- Resource and Cost Allocation

Unit 3: Resource Allocation and Resource Levelling:

- Management of Resources
- Planning and Scheduling Limited Resources
- Resource Allocation Algorithms for Resource Prioritization
- Solving Resource Contention
- Resource Levelling when Project Duration is Fixed
- The Brooks Method of Resource Allocation
- Increasing the Workforce
- Solving Interruptions to the Schedule
- Scheduling Overtime

Unit 4: Accelerating the Project Schedule:

- Circumstances Requiring Project Acceleration
- Time-Cost-Scope Trade-off
- Project Time Reduction
- Direct Project Costs
- Indirect Project Costs
- Options for Accelerating the Schedule
- Crashing the Schedule - How?

- Pre-Accelerated Schedule
- Developing a Crash Cost Table
- Acceleration in Practice
- The Optimal Acceleration Point
- Gantt Chart for Accelerated Schedule
- Network Activity Risk Profiles
- Additional Considerations
- Multiple Critical Paths
- Project Cost Reduction

Unit 5: Project Contingency Planning:

- Program Evaluation and Review Technique (PERT)
- Path Convergence Analysis
- Solving the Path Convergence Problem
- Network Risk Profile Types
- Normal Distribution
- PERT, Probability and Standard Deviation Formulae
- Calculating the Standard Deviation
- Standard Deviation for Critical Path
- Z-Values: The Probability of Project Completion at a Required Date
- True Critical Path
- Network Activity Risk Profiles
- Application: Estimating Project Duration

Unit 6: Line of Balance Scheduling - The Planning of Recurring Activities:

- Preparing a Line of Balance Schedule
- Velocity Diagrams and Linear Scheduling
- Velocity Diagram Production Rate Calculations
- Linear Sequence of Activities as a Series of Velocity Diagrams
- Balancing the Schedule
- Calculations for a Line of Balance Schedule
- Line of Balance Formulae
- Target Units per Week
- Determining Crew Size
- Actual Rate of Output
- Time to Complete One Activity
- Elapsed Time for Recurring Activity
- The slope of the Line from Activity Start to Activity Finish
- Balanced Project Schedule without Buffers (Finish-Start)
- Inserting Buffers
- Comparison of Unbalanced with Balanced Schedules
- Measuring Planned Progress on Schedule
- Velocity Diagram Reflecting Expected Conditions
- Actual Progress and Work Conditions
- Variable Conditions

Unit 7: Project Execution Management, Control, and Reporting:

- Progress Tracking and Monitoring
- Project Cost Management

- Earned Value Control Process
- Schedule Variances
- Cost Variances
- Progress Control Charts - Trend Analysis
- Schedule and Cost Variance Forecasting
- Labour Management and Cost Control
- Materials Management and Cost Control
- Earned Value Analysis
- Earned Value Reporting

Unit 8: Project Recovery Plan Development:

- Project Variance Analysis and Quantification
- Schedule Performance Index (SPI)
- Cost Performance Index (CPI)
- Setting Schedule and Cost Control Limits
- Project Recovery Data Assessment
- Schedule and Cost Recovery Analysis
- Schedule and Cost Recovery Plan
- Project Recovery Baselines and Controls

Targeted Groups:

- Project Managers
- Cost Estimators
- Project Schedulers
- Project Designers
- Project Planner
- Senior Managers who want to understand best practices in project management
- Those who are interested in knowing more about scheduling and planning in a project environment

---