



Planning and Scheduling Professional
for Project Management



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Introduction

The Planning and Scheduling Professional for Project Management course develops advanced capabilities in project planning, scheduling, monitoring, and schedule control from a project management perspective. It gives participants a structured approach to turning project scope and objectives into realistic, integrated, and controllable project schedules. It covers Work Breakdown Structures WBS, activity definition, network logic, Critical Path Method CPM, PERT, resource planning, schedule risk analysis, baselines, progress measurement, forecasting, schedule optimization, and recovery planning.

Participants will develop and manage project schedules throughout the complete project lifecycle. The program analyzes schedule performance, identifies delays and variances, manages resources and interfaces, forecasts project completion, and develops corrective and recovery strategies. It covers integrating scheduling with project cost, risk, procurement, stakeholder management, and project controls, enabling Project Managers to use schedule information effectively for management decisions and successful project delivery.

Targeted Groups

This Planning and Scheduling Professional for Project Management training targets professionals seeking knowledge and skills:

- Project Managers and Project Directors.
- Project Planning Managers.
- PMO Professionals.
- Project Planners and Schedulers.
- Project Controls Managers and Engineers.
- Engineering and Construction Project Professionals.
- Project Engineers.
- Cost and Planning Engineers.
- Professionals responsible for project monitoring and reporting.
- Professionals preparing for senior project management responsibilities.

Course Objectives

Participants will achieve the following objectives by completing the Planning and Scheduling Professional for Project Management course:

- Understand advanced principles and practices of professional project planning and scheduling.
- Translate project scope and deliverables into structured WBS and integrated project schedules.
- Define project activities, durations, dependencies, milestones, calendars, and constraints.
- Apply CPM and PERT techniques to analyze project schedules.
- Identify critical and near-critical activities and evaluate their impact on project completion.
- Develop realistic project baselines for effective schedule control.
- Plan and optimize project resources across different phases and work packages.

- Integrate engineering, procurement, execution, testing, and project completion activities.
- Monitor project progress and evaluate planned-versus-actual schedule performance.
- Identify schedule variances, delays, and emerging project risks.
- Forecast project completion dates and future schedule performance.
- Apply schedule compression, acceleration, and recovery techniques.
- Integrate project schedule information with cost, risk, procurement, and earned value analysis.
- Develop management-level schedule reports, dashboards, forecasts, and narratives.
- Use project scheduling information to support effective management decision-making.

Targeted Competencies

Participants will gain the following competencies during the Planning and Scheduling Professional for Project Management program:

- Project Planning and Scheduling.
- Work Breakdown Structure Development.
- Schedule Development and Network Logic.
- Critical Path and Float Analysis.
- Project Resource Planning.
- Project Schedule Risk Management.
- Baseline Development and Control.
- Progress Measurement and Monitoring.
- Schedule Variance Analysis.
- Project Forecasting.
- Schedule Optimization.
- Delay and Impact Analysis.
- Schedule Recovery Planning.
- Project Controls Integration.
- Earned Value Analysis.
- Project Reporting and Communication.
- Management Decision Support.

Real-world Case Studies

In this Planning and Scheduling Professional for Project Management training, participants develop skills through the following cases:

- Developing an integrated schedule for a complex engineering project.
- Analyzing a delayed project and identifying the activities driving the completion date.
- Evaluating resource constraints and determining appropriate leveling strategies.
- Assessing the impact of procurement delays on the overall project schedule.
- Updating a baseline following approved scope changes.
- Developing a schedule recovery strategy for a project experiencing significant delay.
- Preparing a project schedule status report and forecast for senior management.

Course Content

Unit 1: Project Planning and Schedule Development

- Understand the role of planning and scheduling throughout the project lifecycle.
- Define the relationship between project scope, deliverables, planning, and scheduling.

- Translate project scope into a structured Work Breakdown Structure WBS.
- Develop control accounts, work packages, activities, and project milestones.
- Establish activity attributes, durations, calendars, and coding structures.
- Identify project interfaces, dependencies, assumptions, and constraints.
- Develop network logic using the Precedence Diagramming Method PDM.
- Apply Finish-to-Start, Start-to-Start, Finish-to-Finish, and Start-to-Finish relationships.
- Apply leads and lags appropriately within project schedules.
- Establish project milestones and key contractual dates.
- Develop integrated schedules aligned with project objectives and deliverables.
- Establish schedule governance and planning responsibilities.

Unit 2: Critical Path, Resource Planning and Schedule Analysis

- Perform forward and backward pass calculations.
- Calculate Early Start, Early Finish, Late Start, and Late Finish.
- Determine total float and free float.
- Apply the Critical Path Method CPM.
- Apply PERT for duration and schedule uncertainty.
- Identify critical, near-critical, and driving paths.
- Analyze activity relationships and schedule logic.
- Evaluate the effect of constraints on project completion.
- Develop resource-loaded project schedules.
- Plan labor, equipment, and other project resources.
- Apply resource allocation, leveling, and smoothing techniques.
- Identify and resolve resource conflicts and constraints.
- Evaluate schedule quality, logic, durations, float, and integrity.
- Use scheduling software concepts for schedule development and analysis.

Unit 3: Project Schedule Risk, Optimization and Recovery

- Identify schedule risks across project scope, resources, procurement, interfaces, and execution.
- Assess the probability and impact of schedule risks.
- Evaluate duration uncertainty and schedule exposure.
- Integrate risk responses into project schedules.
- Analyze schedule sensitivity and critical-path exposure.
- Identify potential causes of project delay.
- Assess the schedule impact of scope and execution changes.
- Apply schedule optimization techniques.
- Apply crashing and fast-tracking techniques.
- Evaluate opportunities for activity resequencing.
- Develop project acceleration strategies.
- Prepare schedule recovery plans for delayed projects.
- Evaluate resource implications of schedule recovery.
- Analyze forecast trends and emerging schedule problems.
- Select corrective and preventive schedule actions.

Unit 4: Integrated Project Planning and Project Controls

- Develop integrated project schedules across project phases.
- Coordinate design, engineering, procurement, execution, testing, and completion activities.
- Integrate contractor, supplier, and stakeholder schedules.
- Manage interfaces between project work packages.

- Integrate procurement lead times and delivery milestones into the project schedule.
- Develop resource-loaded and cost-loaded schedules.
- Integrate project schedules with project budgets and cost controls.
- Establish schedule baselines and control procedures.
- Apply progress measurement methods.
- Integrate scheduling with Earned Value Management EVM.
- Analyze schedule and cost performance indicators.
- Evaluate the impact of project changes on the approved schedule.
- Apply change control principles to schedule management.
- Maintain alignment between scope, schedule, cost, risk, and resources.
- Support project management decisions using integrated project controls information.

Unit 5: Schedule Monitoring, Forecasting and Management Reporting

- Establish project status dates and progress measurement rules.
- Update project schedules using actual progress information.
- Record actual starts, actual finishes, and remaining durations.
- Compare current schedule performance against the approved baseline.
- Analyze planned-versus-actual progress.
- Identify schedule variances and performance trends.
- Forecast project and milestone completion dates.
- Analyze critical-path changes during project execution.
- Identify emerging delays and potential future impacts.
- Develop corrective action and recovery recommendations.
- Prepare schedule narratives explaining progress, variances, delays, and forecasts.
- Develop project schedule dashboards and management reports.
- Communicate critical issues, milestones, exceptions, and forecasts to stakeholders.
- Present schedule information effectively to senior management.
- Use schedule performance information to support project decision-making.
- Apply integrated project planning and control concepts to project scenarios.

Final Insights & Key Takeaways

Participants will leave the course with an understanding of project planning and scheduling from a Project Manager's perspective. They will develop integrated schedules, manage resources, identify critical paths and schedule risks, monitor project performance, forecast completion, manage delays, develop recovery strategies, and use project schedule information to support effective management decisions.