JUPITER PRIME
Consulting • Training • Advisory
جوبيتر برايم للاستشارات والتدريب

COURSE BROCHURE

AI-Powered Project Scheduling and Forecasting Training Course

2 – 6 May 2027
Online

AI-Powered Project Scheduling and Forecasting Training Course

Ref: 81_2049 **Date:** 2 – 6 May 2027 **Location:** Online **Fees:** 2900 GBP

AI-Powered Project Scheduling and Forecasting is a 1-week training course for PMO heads, portfolio managers and project controls and planning leads, in which participants build a PMO predictive delivery dashboard for their own portfolio. Executive committees now expect finish dates and cost outturns expressed as probabilities rather than single promises, and machine learning trained on past schedules can flag slippage months before a milestone is missed. The course is delivered by Jupiter Prime Training.

Why AI-Powered Project Scheduling and Forecasting Matters Now

Three pressures shape portfolio delivery today. Capital programmes in infrastructure, energy and digital transformation run more projects in parallel, competing for the same planners, engineers and specialist crews; sponsors and boards want early, evidence-based warning instead of optimistic monthly status colours; and planning tools now hold years of baseline and actual data that rarely inform the next forecast. A PMO that learns from this history commits to realistic dates and moves resources before a crisis. One that does not keeps reporting green until a project turns red overnight. Model oversight follows ISO/IEC 42001 AI management systems and the NIST AI Risk Management Framework NIST AI RMF.

Who Gains Most from AI-Powered Project Scheduling and Forecasting

- Leaders who run a portfolio or programme office and report delivery to executives
- Leaders who own master schedules, baselines and critical path quality
- Leaders responsible for earned value reporting and cost-to-complete forecasts
- Leaders who allocate shared engineers, planners and specialist resources across projects
- Leaders who set stage-gate criteria and decide which projects proceed, pause or re-plan

An organisation gains most when its PMO head, lead planner and cost controller attend together, because schedule, resource and cost forecasts only become credible when they draw on one data set.

AI-Powered Project Scheduling and Forecasting Capabilities

Participants leave able to turn baseline-versus-actual history into probability-based finish dates, early slippage alerts and portfolio resourcing choices that sponsors can trust.

- Assess schedule quality for logic gaps, open ends and excessive constraints before modelling — lead planners
- Apply Monte Carlo simulation to produce P50 and P80 completion dates — programme sponsors
- Build a slippage prediction model from activity history and progress patterns — PMO heads
- Calculate earned value trend forecasts for estimate at completion — cost controllers and finance
- Weigh resource capacity forecasts across the portfolio to resolve clashes — resource managers
- Design a portfolio heatmap and alert rules for executive reviews — executive committees

Key AI-Powered Project Scheduling and Forecasting Terms

- Critical path — the longest chain of dependent activities that sets the earliest possible project finish date.
- Total float — how long an activity can slip without delaying the project finish; low float signals exposure.
- Monte Carlo schedule simulation — running the schedule many times with varied durations to estimate the probability of finishing by each date.
- P80 date — the finish date the project has an estimated eighty per cent chance of meeting or beating.
- Schedule performance index SPI — the earned value ratio of work achieved to work planned, showing whether progress runs ahead or behind.
- Reference class forecasting — predicting a project's outcome from the actual results of a group of similar past projects.

AI-Powered Project Scheduling and Forecasting Day by Day

Day 1: Portfolio Delivery Under Uncertainty

- Portfolio Delivery Pressures in Infrastructure and Digital Programmes — Sponsor Expectations
- Optimism Bias and Planning Fallacy — Why Single-Point Dates Fail
- Baseline and Actuals Data Inventory — Readiness for Predictive Models
- Schedule Quality Health Checks — Logic, Constraints and Open Ends
- Reference Class Forecasting — Learning From Completed Projects

Day 2: Schedule Risk and Simulation

- Critical Path and Near-Critical Path Analysis — Float Erosion Patterns
- Monte Carlo Schedule Simulation — P50 and P80 Completion Dates
- Duration Uncertainty Ranges From Historical Data — Replacing Guesswork
- Schedule Sensitivity and Tornado Charts — Activities Driving Delay
- Merge Bias at Converging Paths — Hidden Exposure in Milestones

Day 3: Machine Learning for Slippage and Cost Forecasts

- Slippage Prediction Models From Activity Progress Data — Early Warning Lead Time
- Earned Value Trend Forecasting — SPI, CPI and Estimate at Completion
- Anomaly Detection in Progress Updates — Unrealistic Percent-Complete Claims
- Natural Language Analysis of Status Reports — Sentiment and Hidden Issues
- Forecast Accuracy Tracking — Model Versus Planner Performance

Day 4: Resource Capacity and Portfolio Decisions

- Resource Capacity Forecasting Across Projects — Shared Specialist Bottlenecks
- AI-Assisted Resource Levelling Scenarios — Sequencing and Start Date Choices
- Portfolio Heatmaps and Delivery Confidence Scores — Executive Review Focus
- Stage-Gate Decision Support — Proceed, Pause or Re-Plan
- ISO/IEC 42001 and NIST AI RMF — Oversight of Forecasting Models

Day 5: Practising the PMO Predictive Delivery Dashboard

- Dashboard Metric Selection — P80 Dates, SPI Trends and Capacity Gaps
- Data Pipeline From Planning Tools — Update Frequency and Ownership
- Alert Thresholds and Escalation Rules — Linking Forecasts to Action
- Executive Narrative for Forecast Ranges — Communicating Probability Not Promises
- PMO Predictive Delivery Dashboard — Metrics, Models, Owners and Review Cycle

Applying AI-Powered Project Scheduling and Forecasting After the Course

- Run a Monte Carlo simulation on one live project schedule and present its P50 and P80 dates beside the current committed finish date to the sponsor.
- Train a simple slippage prediction model on two years of completed project activity data and compare its warnings with the last quarter's status colours.

AI-Powered Project Scheduling and Forecasting Questions FAQ

What is AI-powered project scheduling and forecasting, and why does it matter now?

It is the use of simulation and machine learning on schedule, progress and resource data to forecast finish dates, cost outturns and slippage. It matters now because portfolios are larger and sponsors want evidence-based warning instead of optimistic status reports.

Which roles gain most from AI-powered project scheduling and forecasting?

PMO heads, portfolio managers, lead planners, cost controllers and resource managers gain most. You learn to combine schedule risk, earned value and capacity data into forecasts that executives can act on.

How does AI-powered project scheduling and forecasting differ from an AI course on contract and project administration?

It concentrates on time, cost and capacity forecasting across a portfolio. Instead of contract documents or claims, you work on critical path analysis, Monte Carlo simulation, earned value trends, slippage models and resource levelling.

What do you bring back from AI-powered project scheduling and forecasting?

You bring back a predictive delivery dashboard design for your portfolio. It defines probability-based dates, SPI and capacity metrics, the data pipeline from planning tools, and the alert rules that trigger action.

AI-Powered Project Scheduling and Forecasting: The Way Forward

The PMO predictive delivery dashboard first informs which projects receive executive attention or extra resources at the next portfolio review. PMO heads, planners and cost controllers use it to agree metrics and alert owners. After two reporting cycles, revisit forecast accuracy against actual progress, because it shows whether the models or the underlying schedules need improving first.