

Course No. 1580

Construction Planning & Scheduling Training Course

**PROJECT ENGINEERING & CONSTRUCTION
INDUSTRIAL ENGINEERING, MAINTENANCE & OPERATIONS**

DURATION

5 Days

DELIVERY

Classroom



Course Overview

The Construction Planning & Scheduling Training Course provides a comprehensive professional program designed to develop the planning, scheduling, coordination, monitoring, and project control capabilities required for effective construction project delivery. Construction projects operate within complex environments where labor, materials, equipment, engineering deliverables, contractors, procurement activities, site conditions, quality requirements, and commercial commitments must be carefully coordinated. Effective construction planning and scheduling provide the structure needed to align these elements and support predictable project execution.

The course examines the principles and practical techniques used to develop, analyze, maintain, and control construction schedules throughout the project lifecycle. Participants explore work breakdown structures, activity definition, sequencing, durations, dependencies, milestones, resource planning, critical path analysis, schedule baselines, progress measurement, schedule updates, and performance evaluation. The program emphasizes the connection between planning decisions and actual site execution, helping participants understand how schedule quality influences productivity, resource utilization, project cost, and completion dates.

A key focus of the Construction Planning & Scheduling Training Course is the integration of project planning with engineering, procurement, construction, and project controls. Participants learn how to identify schedule constraints, monitor engineering and procurement interfaces, assess resource availability, analyze delays, evaluate schedule deviations, and develop practical recovery strategies. The course also addresses short-term and look-ahead planning, progress reporting, productivity monitoring, schedule forecasting, change impacts, and coordination between project stakeholders.

Through practical exercises, construction scenarios, case studies, schedule analysis activities, and applied workshops, participants develop the ability to translate project scope into structured execution plans and reliable schedules. The course is particularly relevant to organizations involved in infrastructure, buildings, oil and gas, petrochemicals, energy, utilities, industrial facilities, manufacturing, and major capital projects, while providing valuable planning and scheduling capabilities for government entities, project owners, consultants, and contractors.

Objectives

- Analyze construction project scope and translate approved requirements into structured work breakdown structures, activities, milestones, and planning packages during the course.
- Develop integrated construction plans that align engineering, procurement, construction activities, resources, interfaces, and project completion requirements.
- Evaluate activity relationships, durations, constraints, dependencies, and sequencing to establish practical and logically connected construction schedules.
- Apply critical path and schedule analysis techniques to identify activities that directly influence project completion and milestone achievement.
- Design resource-loaded planning approaches covering labor, equipment, materials, subcontractors, and other critical construction resources.
- Improve short-term, weekly, and look-ahead planning practices to strengthen coordination between project management and site execution teams.
- Assess actual progress against approved baselines and identify schedule variances, emerging delays, productivity issues, and execution constraints.
- Apply structured delay analysis and root cause assessment techniques to determine the underlying causes and potential consequences of schedule slippage.
- Develop practical schedule recovery and acceleration strategies that consider resources, productivity, sequencing, cost, risks, and construction feasibility.
- Evaluate the schedule impact of engineering changes, procurement delays, variations, technical issues, and site constraints.
- Strengthen construction progress reporting, forecasting, and schedule communication to provide management with timely and reliable project information.
- Develop an integrated construction planning and scheduling improvement plan aligned with project objectives, execution priorities, and organizational requirements.

Who Should Attend

The Construction Planning & Scheduling Training Course is designed for planning engineers, project planners, scheduling engineers, project controls professionals, construction managers, project managers, project engineers, site managers, construction engineers, field engineers, and professionals responsible for developing, maintaining, monitoring, and controlling construction schedules. It is particularly relevant to specialists involved in civil, structural, mechanical, electrical, industrial, infrastructure, building, energy, utilities, and oil and gas construction projects.

The program is also valuable for cost engineers, quantity surveyors, contract and commercial professionals, procurement specialists, engineering coordinators, construction supervisors, project control managers, risk professionals, consultants, contractors, and subcontractor management teams who need to understand the relationship between construction planning, scheduling, resources, cost, procurement, engineering, and site execution.

The course is suitable for executives, senior managers, and decision makers within government entities, ministries, public sector organizations, project owners, engineering consultancies, EPC contractors, construction companies, oil and gas organizations, energy and utilities companies, infrastructure developers, industrial organizations, manufacturing companies, and large corporations responsible for managing construction programs and capital investment projects.

Learning Outcomes

- Explain the fundamental principles and structure of effective construction planning and scheduling.
- Develop a work breakdown structure that translates project scope into manageable construction activities and planning packages.
- Define activities, durations, relationships, constraints, milestones, and dependencies required to create logically connected construction schedules.
- Analyze critical paths, near-critical activities, float, constraints, and schedule logic to identify potential impacts on project completion.
- Prepare resource plans covering labor, equipment, materials, subcontractors, and other resources required for construction execution.
- Develop short-term and look-ahead plans that connect master schedules with actual site activities and immediate execution priorities.
- Measure and verify construction progress using appropriate progress measurement methods and reliable field information.
- Analyze schedule variances, delays, productivity losses, and constraints and identify their root causes.
- Evaluate the schedule impact of engineering deliverables, procurement activities, changes, variations, and site conditions.
- Develop realistic recovery and acceleration strategies that balance schedule requirements with resources, productivity, cost, quality, and safety considerations.

- Prepare effective schedule reports, forecasts, progress updates, and management information for informed decision-making.
- Develop a practical construction planning and scheduling improvement plan for application within a real project environment.

Course Outline

DAY 01

Fundamentals of Construction Planning and Project Scheduling

- Principles, objectives, and responsibilities of construction planning and scheduling
- Construction project lifecycle and the role of planning throughout project execution
- Understanding project scope, contractual requirements, deliverables, and completion milestones
- Development of work breakdown structures for construction projects
- Defining construction activities, work packages, milestones, and planning levels
- Activity relationships, sequencing, dependencies, and logical schedule networks
- Estimating activity durations and identifying planning assumptions
- Construction constraints, calendars, working conditions, and site considerations
- Schedule hierarchy from master schedule to detailed and short-term plans
- Roles of planning engineers, project managers, construction teams, and project controls

PRACTICAL APPLICATION

Develop a work breakdown structure and initial construction schedule for a representative project

DAY 02

Schedule Development, Critical Path, and Resource Planning

- Principles of construction schedule development and schedule logic
- Critical path method and identification of critical and near-critical activities
- Float analysis and evaluation of schedule flexibility

DAY 02 — CONTINUED

- Milestone management and integration of key project dates
- Resource planning for labor, equipment, materials, and subcontractors
- Resource availability, productivity assumptions, and resource constraints
- Resource allocation and identification of resource-driven schedule risks
- Integration of engineering deliverables and procurement activities into construction schedules
- Long-lead materials and equipment and their influence on construction planning
- Baseline schedule development and schedule quality review

PRACTICAL APPLICATION

Develop and analyze a construction schedule, identify the critical path, and evaluate resource constraints affecting project completion

DAY 03

Progress Measurement, Schedule Control, and Site Coordination

- Construction progress measurement principles and methods
- Establishing reliable progress measurement systems
- Actual progress collection and validation from site teams
- Schedule updates and comparison with approved baseline plans
- Analysis of planned versus actual performance
- Short-term, weekly, and look-ahead planning
- Constraint identification and removal planning
- Productivity monitoring and its relationship with schedule performance
- Coordination between planning, construction, engineering, procurement, quality, and safety teams
- Progress reporting, schedule narratives, dashboards, and management information

PRACTICAL APPLICATION

Update a construction schedule using field progress information and identify schedule variances, constraints, and immediate corrective actions

DAY 04

Delay Analysis, Schedule Risk, Changes, and Recovery Planning

- Construction delay concepts and common causes of schedule slippage
- Delay identification, classification, documentation, and analysis
- Root cause analysis for construction delays and productivity losses
- Schedule risk identification and assessment
- Impact of engineering delays, procurement issues, design changes, variations, and site constraints
- Time impact assessment for project changes and technical issues
- Recovery planning and development of corrective schedules
- Acceleration strategies, additional resources, resequencing, and productivity improvement
- Evaluating the cost, quality, safety, and operational implications of schedule acceleration
- Forecasting project completion dates and assessing emerging schedule risks

PRACTICAL APPLICATION

Analyze a delayed construction project, identify root causes, quantify schedule impacts, and develop a realistic recovery strategy

DAY 05

Integrated Construction Planning, Forecasting, and Schedule Optimization

- Integration of construction planning with cost, resources, procurement, engineering, quality, and project controls
- Schedule forecasting and evaluation of expected completion dates
- Performance trends and identification of emerging project risks
- Schedule optimization and improvement of construction sequencing
- Managing interfaces between contractors, subcontractors, suppliers, consultants, and project teams
- Construction planning for testing, commissioning, handover, and project completion
- Final schedule review, outstanding activities, and completion planning

DAY 05 — CONTINUED

- Lessons learned and improvement of future construction planning processes
- Developing effective planning and scheduling governance within project organizations

PRACTICAL

Practical approaches for improving schedule reliability, transparency, and decision support

FINAL WORKSHOP

Conduct a comprehensive construction planning and scheduling assessment and develop an integrated improvement plan covering scope, activities, critical path, resources, progress, delays, risks, recovery actions, forecasting, and project completion

Register or Request More Information

Course page: <https://quest-training.com/courses/construction-planning-scheduling-training-course>

Website: <https://quest-training.com>

Email: info@quest-training.com

Phone: +905016771440