QUEST
Professional Center

PROFESSIONAL TRAINING COURSE

Course No. 1577

Engineering Procurement & Construction (EPC) Project Management Training Course

PROJECT ENGINEERING & CONSTRUCTION
INDUSTRIAL ENGINEERING, MAINTENANCE & OPERATIONS

DURATION
5 Days

DELIVERY
Classroom

Course Overview

The Engineering Procurement & Construction (EPC) Project Management Training Course provides a comprehensive professional program designed to develop the managerial, technical, and commercial capabilities required to successfully plan, coordinate, execute, monitor, and control complex EPC projects. EPC projects involve multiple disciplines, contractors, suppliers, engineering teams, and stakeholders, making effective project management essential for achieving required cost, schedule, quality, safety, and performance objectives.

The course examines the complete EPC project lifecycle, from project planning, engineering and design through procurement, construction, commissioning, handover, and closeout. Participants develop a practical understanding of how these stages interact and how decisions made during engineering and procurement can directly influence construction productivity, project costs, schedule performance, risk exposure, and final project outcomes.

A key focus of the program is the integration of engineering, procurement, and construction activities. Participants explore project scope management, work breakdown structures, scheduling, cost control, procurement planning, supplier management, contractor coordination, contract administration, change management, claims management, and interface management. The course emphasizes practical methods for maintaining alignment between project teams and managing dependencies across technical, commercial, and operational functions.

The program also addresses project risk management, performance monitoring, quality assurance, health and safety considerations, progress measurement, cost and schedule forecasting, and corrective action planning. Participants learn how to identify emerging issues, analyze project deviations, evaluate their potential impact, and implement timely interventions to protect project objectives and maintain effective project control.

Through practical exercises, case studies, project scenarios, and integrated workshops, participants develop a structured approach to managing EPC projects from initiation through completion. The Engineering Procurement & Construction (EPC) Project Management Training Course is particularly relevant to organizations involved in oil and gas, petrochemicals, energy, utilities, infrastructure, industrial facilities, manufacturing, and major capital projects.

Objectives

- Analyze the key stages of the EPC project lifecycle and define the management requirements associated with engineering, procurement, construction, commissioning, and closeout.
- Develop an integrated EPC project management framework connecting scope, schedule, cost, resources, quality, risk, procurement, and stakeholder requirements.
- Evaluate project scope, work breakdown structures, deliverables, responsibilities, and interfaces to establish effective project control.
- Apply practical scheduling techniques to identify critical activities, monitor progress, evaluate delays, and support timely project completion.
- Assess procurement strategies, supplier performance, material requirements, and long-lead equipment risks within the EPC project environment.
- Analyze project costs, commitments, progress, and variances to support effective financial and commercial control.
- Apply structured risk management techniques to identify, evaluate, prioritize, and respond to technical, commercial, contractual, and execution risks.
- Design effective approaches for managing project changes, variations, claims, and their potential impact on cost, schedule, scope, and resources.
- Strengthen coordination and interface management between engineering, procurement, construction, commissioning, contractors, suppliers, and project stakeholders.
- Evaluate project quality, safety, productivity, and performance indicators and determine appropriate corrective and preventive actions.
- Implement practical project reporting and progress-monitoring methods that provide management with timely and reliable information.
- Develop an integrated EPC project improvement plan based on project performance, risks, resources, contractual requirements, and organizational priorities.

Who Should Attend

The Engineering Procurement & Construction (EPC) Project Management Training Course is designed for project managers, project directors, engineering managers, construction managers, procurement managers, contracts managers, project engineers, planning engineers, cost engineers, construction engineers, procurement engineers, and professionals involved in the planning, execution, monitoring, and control of EPC projects.

The program is also highly relevant to project controls specialists, contract and claims professionals, procurement and supply chain specialists, project planners, schedulers, risk professionals, quality professionals, health and safety specialists, construction supervisors, site managers, discipline engineers, project coordinators, and professionals responsible for contractor and supplier performance.

The course is particularly suitable for professionals working in oil and gas companies, refineries, petrochemical facilities, power generation, utilities, infrastructure, industrial projects, manufacturing, and major capital investment programs. It is also valuable for government entities, project owners, engineering consultants, EPC contractors, project management organizations, and decision makers responsible for project delivery, capital expenditure, contractor performance, and operational readiness.

Learning Outcomes

- Explain the complete EPC project lifecycle and the relationship between engineering, procurement, construction, commissioning, and project closeout.
- Develop an integrated EPC project management structure covering scope, schedule, cost, resources, risks, quality, procurement, and stakeholder requirements.
- Establish project scope, work breakdown structures, responsibilities, deliverables, and key project interfaces.
- Develop and analyze project schedules, identify critical activities, and evaluate the potential impact of delays on project completion.
- Evaluate procurement performance, supplier activities, material requirements, and long-lead equipment risks.
- Analyze project cost information, commitments, progress measurements, and cost or schedule variances.
- Apply structured risk assessment and response techniques to technical, commercial, contractual, and construction-related risks.
- Manage project changes, variations, claims, and associated impacts on project scope, cost, schedule, and resources.
- Improve coordination between engineering, procurement, construction, commissioning, contractors, suppliers, and project stakeholders.
- Evaluate project quality, safety, productivity, and performance information to identify areas requiring corrective action.

- Prepare effective project progress reports and management information to support informed decision-making.
- Develop a practical action plan for improving EPC project performance, delivery control, coordination, and project outcomes.

Course Outline

DAY 01

Fundamentals of EPC Project Management

- EPC project concepts, characteristics, and delivery models
- EPC project lifecycle and major execution phases
- Roles and responsibilities of owners, consultants, EPC contractors, suppliers, and subcontractors
- Project objectives, scope definition, and project requirements
- Work breakdown structures and project deliverables
- Project organization and responsibility allocation
- Stakeholder identification and communication management
- Interface management between engineering, procurement, construction, and commissioning
- Critical success factors and common causes of EPC project failure

> **PRACTICAL APPLICATION**
> Develop an initial management structure for an EPC project and identify key responsibilities, interfaces, and project deliverables

DAY 02

Engineering, Procurement, and Supply Chain Management

- Engineering planning and design deliverables
- Engineering document control and review processes
- Coordination between engineering disciplines
- Procurement strategy and procurement planning
- Purchase specifications, requests for quotations, and supplier evaluation

DAY 02 — CONTINUED

- Technical and commercial evaluation of suppliers
- Supplier qualification and performance management
- Long-lead equipment and critical material management
- Manufacturing, inspection, transportation, and delivery monitoring
- Procurement risks and their impact on project schedules

PRACTICAL APPLICATION

Develop an EPC procurement and supply plan and identify critical materials, long-lead items, supplier risks, and monitoring requirements

DAY 03

Construction Management, Scheduling, and Cost Control

- Construction planning and site mobilization
- Management of labor, materials, equipment, and construction resources
- Project scheduling and activity sequencing
- Critical path analysis and schedule control
- Progress measurement and productivity monitoring
- Project budget, cost control, commitments, and expenditure monitoring
- Analysis of cost and schedule variances
- Contractor and subcontractor management
- Quality inspection and testing during construction
- Integration of safety, quality, productivity, and construction performance

PRACTICAL APPLICATION

Analyze an EPC project schedule, identify critical activities and causes of delay, and evaluate cost and progress deviations

DAY 04

Risk, Change, Claims, and Project Performance Management

- Identification and classification of EPC project risks
- Risk probability, impact assessment, and prioritization
- Risk response planning and risk monitoring
- Project change management and variation control
- Evaluating the impact of changes on scope, cost, schedule, and resources
- Contract administration and claims management
- Delay analysis and root cause analysis
- Key performance indicators for EPC projects
- Project progress reporting and management dashboards
- Corrective and preventive action planning

> **PRACTICAL APPLICATION**
>
> Analyze a troubled EPC project, identify key risks and changes, determine causes of delay, and develop a corrective action plan

DAY 05

Project Integration, Optimization, and Handover

- Integration of engineering, procurement, construction, and commissioning activities
- Final project performance assessment
- Cost, schedule, productivity, and resource optimization
- Quality assurance and readiness for testing and commissioning
- Project completion, handover, and closeout planning
- Final documentation and technical records management
- Lessons learned and knowledge capture
- Stakeholder coordination during project completion
- Continuous improvement and EPC project delivery excellence
- Developing practical improvement strategies for future capital projects

DAY 05 — CONTINUED

FINAL WORKSHOP

Conduct a comprehensive assessment of an EPC project and develop an integrated improvement plan covering scope, schedule, cost, procurement, construction, risks, quality, interfaces, and project handover

Register or Request More Information

Course page: https://quest-training.com/courses/engineering-procurement-construction-epc-project-management-training-course
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