

Course No. 1635

Production Planning & Control Training Course

MANUFACTURING & PRODUCTION ENGINEERING
INDUSTRIAL ENGINEERING, MAINTENANCE & OPERATIONS

DURATION

5 Days

DELIVERY

Classroom



Course Overview

The Production Planning & Control Training Course is a comprehensive professional program designed to develop the practical capabilities required to plan, coordinate, schedule, monitor, and control production activities effectively. The course provides participants with an integrated understanding of how demand, production capacity, materials, equipment, workforce, inventory, and delivery requirements interact to influence manufacturing performance.

Effective production planning and control are essential for maintaining a reliable balance between customer demand and available resources. Poor planning can contribute to material shortages, excessive inventory, equipment underutilization, production delays, capacity constraints, and missed delivery commitments. This course provides a structured approach to developing realistic production plans, allocating resources effectively, monitoring execution, analyzing deviations, and taking appropriate corrective actions.

The Production Planning & Control Training Course covers the core disciplines of production planning, demand forecasting, capacity planning, material requirements planning, production scheduling, work-order sequencing, inventory coordination, shop-floor control, production monitoring, and performance measurement. It also emphasizes the relationship between production planning and procurement, warehousing, maintenance, quality, and supply chain functions to support an integrated production system.

The program is designed for manufacturing organizations, oil and gas companies, energy and petrochemical operations, engineering and industrial organizations, and large corporations, as well as government entities with production or operational activities. Through practical exercises and operational scenarios, participants will develop the ability to create more effective production plans, improve resource utilization, manage production priorities, and strengthen control over actual production performance.

Objectives

- Analyze the fundamental principles of production planning and control and their relationship with operational efficiency, productivity, cost, and delivery performance during the course.
- Develop a practical framework for translating demand forecasts and customer requirements into executable production plans.

- Evaluate available production capacity and align it with demand, equipment, workforce, material availability, and operational constraints.
- Apply material planning techniques to ensure the availability of required materials and components at the appropriate time and quantity.
- Analyze production schedules and work-order priorities to improve resource utilization and delivery performance.
- Design balanced production plans that consider capacity, materials, inventory, equipment, workforce, and production lead times.
- Improve coordination between production, procurement, warehousing, maintenance, quality, and supply chain functions.
- Evaluate inventory requirements and identify risks associated with material shortages, excess inventory, and production interruptions.
- Apply production control techniques to monitor execution, identify deviations, and support timely corrective action.
- Analyze the causes of production delays, schedule deviations, capacity constraints, and execution gaps.
- Develop key performance indicators for measuring planning accuracy, schedule adherence, productivity, capacity utilization, and production performance.
- Prepare an integrated production planning and control model for a selected production environment by the end of the course.

Who Should Attend

The Production Planning & Control Training Course is designed for managers, supervisors, planners, engineers, and specialists responsible for production planning, manufacturing operations, supply chain, materials, inventory, and operational performance. It is particularly suitable for Production Managers, Planning Managers, Operations Managers, Production Planners, Production Controllers, Manufacturing Engineers, Industrial Engineers, Production Engineers, Process Engineers, Materials Planners, Inventory Specialists, Production Coordinators, and Plant Supervisors.

The course is also relevant to Supply Chain Managers, Procurement Managers, Warehouse Managers, Maintenance Managers, Quality Managers, and professionals involved in production scheduling and operational coordination. Executives, department heads, and decision makers in manufacturing, oil and gas, energy, petrochemicals, engineering, industrial services, and large

corporations can benefit from strengthening the integration between production planning, resource management, operational execution, and delivery performance.

Learning Outcomes

- Explain the fundamental principles of production planning and control and their role in operational performance.
- Translate demand forecasts and customer requirements into practical production requirements.
- Analyze production capacity and identify gaps between required output and available capacity.
- Prepare production plans that consider equipment, workforce, materials, inventory, and production lead times.
- Apply production scheduling techniques to prioritize work orders according to operational requirements.
- Determine material requirements and align them with production schedules and delivery commitments.
- Analyze inventory levels and identify risks associated with shortages, excess stock, and material availability.
- Monitor actual production progress and compare operational results against approved production plans.
- Analyze production deviations, delays, downtime, resource constraints, and schedule performance.
- Develop appropriate corrective actions to address production delays and execution gaps.
- Develop performance indicators for planning accuracy, schedule adherence, productivity, capacity utilization, and delivery performance.
- Establish an integrated production planning and control approach that can be applied to a selected workplace environment.

Course Outline

DAY 01

Production Planning Fundamentals and Demand Management

- Understanding production planning and control and its role in operational excellence.
- Linking production strategy with organizational objectives and customer requirements.

DAY 01 — CONTINUED

- Production system types and their impact on planning and scheduling approaches.
- Understanding demand patterns and production forecasting requirements.
- Translating demand forecasts into production requirements.
- Long-term, medium-term, and short-term production planning.
- Identifying the key inputs required for effective production planning.
- Balancing demand, production capacity, resources, and operational constraints.
- Identifying production priorities and planning constraints.

PRACTICAL APPLICATION OR DISCUSSION

Analyze a production scenario and convert demand information into an initial production plan considering available resources and operational constraints.

DAY 02

Capacity Planning, Materials Planning, and Resource Management

- Understanding production capacity and its different dimensions.
- Analyzing available, effective, actual, and utilized production capacity.
- Identifying capacity gaps and operational constraints.
- Workforce, equipment, and work-center capacity planning.
- Principles of material requirements planning and its relationship with production plans.
- Determining required quantities and timing for raw materials and components.
- Integrating production planning with procurement, warehousing, and supply chain activities.
- Managing raw material and component inventory to support production continuity.
- Managing material shortages, supplier delays, and changes in demand.

PRACTICAL APPLICATION OR DISCUSSION

Develop a simplified capacity and material requirements plan and connect it with a selected production schedule.

DAY 03

Production Scheduling and Work-Order Sequencing

- Principles of production scheduling and its role in meeting delivery requirements.
- Converting production plans into work orders and executable schedules.
- Establishing production priorities and sequencing requirements.
- Sequencing work according to due dates, priorities, capacity, and operational constraints.
- Planning equipment and work-center workloads.
- Balancing workloads across production stages and work centers.
- Identifying bottlenecks and their impact on production schedules.
- Managing unexpected changes in demand, capacity, materials, and equipment availability.
- Reducing waiting time, production queues, and work-in-process accumulation.
- Improving material and workflow from production initiation through final output.

PRACTICAL APPLICATION OR DISCUSSION

Develop a practical production schedule and sequence multiple work orders according to priorities, capacity limitations, and delivery requirements.

DAY 04

Production Control, Monitoring, and Deviation Management

- Understanding production control and its relationship with planning and scheduling.
- Monitoring actual production against approved production plans.
- Tracking work-order progress and production completion rates.
- Identifying deviations in quantity, timing, resources, quality, and production output.
- Analyzing the causes of production delays and schedule non-compliance.
- Managing equipment downtime, material shortages, workforce constraints, and operational disruptions.
- Coordinating production, maintenance, quality, warehousing, and materials functions to resolve deviations.
- Developing corrective and preventive actions to improve production stability.
- Using production reports and performance dashboards to support operational control.
- Developing key performance indicators for production planning and control.

DAY 04 — CONTINUED

PRACTICAL APPLICATION OR DISCUSSION

Analyze an actual-versus-planned production report, identify major deviations and their causes, and develop appropriate corrective actions.

DAY 05

Integrated Production Planning and Continuous Improvement

- Evaluating the effectiveness of the current production planning and control system.
- Improving integration between planning, production, procurement, inventory, maintenance, and quality.
- Developing a flexible planning and review cycle that can respond to operational changes.
- Improving production planning accuracy through the effective use of historical and current performance data.
- Developing key performance indicators for production planning and operational control.
- Measuring schedule adherence, production attainment, capacity utilization, productivity, and delivery performance.
- Identifying continuous improvement opportunities within production planning, scheduling, and control.
- Using digital systems and enterprise resource planning platforms to support production planning and information flow.
- Strengthening cross-functional collaboration and accountability for production performance.
- Establishing regular production review mechanisms and plan-adjustment processes.
- Linking production planning and control with operational excellence, productivity improvement, and sustainable performance.

FINAL WORKSHOP, ACTION PLAN, OR IMPLEMENTATION EXERCISE

Develop an integrated production planning and control model covering demand analysis, capacity planning, material requirements, production scheduling, work-order sequencing, performance indicators, deviation monitoring, corrective actions, and continuous improvement priorities.



Register or Request More Information

Course page: <https://quest-training.com/courses/production-planning-control-training-course>

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