

Advanced Production Planning and Control Training Course

31 January – 4 February 2027
Johannesburg

AGILE LEADERS
Training Center

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Advanced Production Planning and Control Training Course

Ref: 2053_250748 **Date:** 31 January – 4 February 2027 **Location:** Johannesburg **Fees:** 4500 Euro

Overview

Advanced Production Planning and Control Training Course is a one-week advanced course for production, materials, operations, supply-chain, plant-control, and industrial-engineering functions who leave with a Closed-Loop Production Control File. Participants connect demand, aggregate plans, master schedules, material requirements, capacity, shop-floor sequencing, execution feedback, and replanning. The course converts separate planning transactions into feasible and traceable manufacturing decisions. Agile Leaders Training Center presents advanced production planning and control.

Who Should Attend

- Functions responsible for demand translation, production plans, and master schedules
- Teams responsible for bills of material, MRP parameters, and planned-order decisions
- Functions responsible for work-center capacity, loading, and finite scheduling
- Groups responsible for shop-floor sequencing, dispatching, and work-in-process control
- Systems functions responsible for ERP, MES, planning data, and execution feedback
- Operations leaders responsible for schedule performance, bottlenecks, and replanning

The course assumes participants already interpret manufacturing demand, inventory, routing, bill-of-material, and work-center data; it leaves out introductory operations management, software configuration, and lean-transformation design.

Departments and Industries

The course supports departments and industries that convert demand into coordinated material, capacity, and execution decisions.

- Production planning, manufacturing operations, and industrial engineering
- Materials management, supply planning, and inventory control
- ERP, MES, manufacturing data, and plant-control functions
- Automotive, electronics, and industrial-equipment manufacturing
- Food, pharmaceutical, and consumer-products production
- Process manufacturing, packaging, and contract-manufacturing operations

Learning Objectives

By the end of this course, participants will be able to:

- Build an integrated production planning hierarchy
- Analyze master schedules and available-to-promise positions
- Apply MRP logic to net requirements and planned orders
- Evaluate rough-cut and detailed capacity feasibility
- Prioritize finite schedules, sequences, and dispatch decisions
- Diagnose execution variance and closed-loop replanning actions

Course Agenda

Day 1: Structure the Planning Hierarchy

- Demand, Forecast, and Customer-Order Reconciliation Sheet
- Aggregate Production Plan and S&OP Interface Map
- Manufacturing Strategy and Planning-Environment Matrix
- Product Structure, Bill-of-Material, and Routing Audit
- Closed-Loop Production Planning Architecture

Day 2: Build the Master Production Schedule

- Master Production Schedule Grid and Planning Horizon
- Time-Fence, Firming, and Schedule-Change Rules
- Available-to-Promise Calculation and Order-Promise Record
- Rough-Cut Capacity Planning Resource Profile
- Master-Schedule Feasibility and Exception Register

Day 3: Plan Materials and Capacity

- MRP Gross-to-Net Requirements Calculation
- Bill-of-Material Explosion and Low-Level Coding Method
- Lot-Size, Safety-Stock, and Lead-Time Parameter Sheet
- Planned-Order Release and Exception-Message Decision Log
- Capacity Requirements Planning Load-versus-Capacity Chart

Day 4: Control Shop-Floor Execution

- Finite-Capacity Loading and Work-Center Schedule Board
- Operation Sequencing and Dispatch-Priority Rule Matrix
- Work-in-Process and Input-Output Control Dashboard
- ERP-to-MES ISA-95 Information-Exchange Map
- Schedule Adherence, Bottleneck, and Variance Diagnostic

Day 5: Practice Production Control Decisions

- Suggested Exercise: Reconcile Demand and the Master Schedule
- Suggested Exercise: Resolve MRP Action Messages
- Suggested Exercise: Balance Capacity and Sequence Orders
- Suggested Exercise: Diagnose Variance and Replan Production
- Capstone Exercise: Present a Closed-Loop Production Control File

Practical Exercises

The course uses suggested activities to connect planning parameters, system outputs, capacity evidence, and execution feedback.

- Suggested activity: convert forecasts and orders into an aggregate plan, master schedule, time fences, and available-to-promise positions.
- Suggested activity: explode a product structure, calculate net requirements, select lot sizes, and resolve planned-order messages.
- Suggested activity: test rough-cut and detailed capacity, load work centers, sequence operations, and issue dispatch priorities.
- Suggested activity: compare actual output with the schedule and document bottleneck, variance, and replanning decisions.

FAQs

Who suits advanced production planning and control training, and what does it assume?

Advanced production planning and control training suits production, materials, operations, supply-chain, plant-control, and industrial-engineering functions. It assumes participants can interpret manufacturing demand, inventory, routing, bill-of-material, and work-center data.

How does production planning and control differ from broad operations management?

Production planning and control links demand, master schedules, materials, capacity, sequencing, dispatching, execution feedback, and replanning. Broad operations management also addresses strategy, process design, quality, supply networks, and organizational performance.

How do MPS and MRP work together in production planning?

The master production schedule states which end items are planned by period. MRP uses that schedule, bills of material, inventory, receipts, lead times, and order policies to calculate component requirements and planned-order actions.

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How is capacity feasibility tested before production orders are released?

Capacity feasibility is tested first against critical resources with rough-cut profiles and then against detailed work-center loads. Planners compare required and available capacity, timing, sequence, and constraints before firming or releasing orders.

What makes production control a closed-loop process?

Closed-loop production control compares actual material, capacity, completion, queue, and schedule evidence with the plan. Exceptions trigger rescheduling, parameter correction, priority changes, escalation, or replanning while preserving the decision record.

Conclusion

Participants take a Closed-Loop Production Control File back to their organization. It links demand, master schedules, MRP, capacity, order release, sequencing, dispatching, work-in-process, execution evidence, and replanning. The file changes disconnected planning outputs into a traceable basis for feasible schedules, controlled release, exception resolution, and manufacturing-performance review.