JUPITER PRIME

Consulting • Training • Advisory

جوبيتر برايم للاستشارات والتدريب

COURSE BROCHURE

Advanced Manufacturing Planning and Control Systems Training Course

jupiterprime.uk

info@jupiterprime.uk

Registered in the United Kingdom and Saudi Arabia

Advanced Manufacturing Planning and Control Systems Training Course

Manufacturing Planning and Control Systems is the subject of this 2-week advanced training course for production control managers, planning engineers and plant managers, who draft an MPC System Design Blueprint for their own plant. Plants now run planning through enterprise systems whose settings, master data and control rules decide whether output, stock and work in progress stay in balance. Jupiter Prime Training presents this course in manufacturing planning and control systems.

Why Manufacturing Planning and Control Systems Matter Now

Three pressures make the planning system a plant-level asset today: ERP and execution software that automate decisions once made by hand, product ranges and routings that change faster than parameters are reviewed, and finance teams that watch inventory and work in progress as closely as output. A plant whose MPC system is designed and maintained deliberately releases the right orders, holds lean buffers and trusts its own numbers; a plant that accepts default settings fights nervous plans, phantom shortages and queues it cannot explain. The course rests on the Manufacturing Resource Planning MRP II hierarchy, Capacity Requirements Planning CRP and Constant Work in Process CONWIP control.

Who Gains Most from Manufacturing Planning and Control Systems

- Managers who own production control and the rules that release work to the floor
- Engineers who configure planning parameters, routings and capacity models
- Plant leaders accountable for output, inventory investment and work in progress
- System owners who run ERP planning modules and integrate execution software
- Inventory controllers who set replenishment policies for components and finished goods

A plant group made up of the production control manager, a planning engineer and the ERP planning key user gains most when attending together, because system design decisions need process and configuration owners at once.

Manufacturing Planning and Control Systems Capabilities

Participants leave able to map how their MPC system turns demand into released orders, tune the parameters that drive it and control work in progress with measurable limits.

- Map the MPC system architecture from front end to shop floor — informing plant leadership
- Specify ERP planning parameters such as lead times, lot sizes and safety stock — serving planning engineers
- Calculate capacity requirements from planned orders — supporting workforce and shift decisions
- Design WIP control with CONWIP or kanban limits — protecting flow and lead time
- Weigh push, pull and hybrid control for each product family — guiding production control managers
- Build a PPC metrics scorecard tied to system performance — informing owners and finance

Key Manufacturing Planning and Control Systems Terms

- MPC System — the processes, rules and software that turn demand into material, capacity and shop floor orders.
- Planning Parameter — a setting such as lead time, lot size, safety stock or yield that steers ERP planning logic.
- Planning Nervousness — frequent, large changes to planned orders caused by small changes in demand or parameters.
- CONWIP — a pull method that caps total work in process on a line and releases new work only as jobs finish.
- Capacity Requirements Planning — calculating work-centre hours that planned and released orders will need in each period.
- Inventory Record Accuracy — the share of stock records that match physical counts within an agreed tolerance.

Manufacturing Planning and Control Systems Day by Day

Day 1: The MPC System Landscape

- MPC Front End, Engine and Back End — Structuring the System View
- MRP II Hierarchy — Linking Business Plans to Shop Floor Orders
- Production Environments and Decoupling Points — Choosing Where Stock Sits
- Food and Electrical Equipment Plant Cases — Comparing MPC Designs
- MPC System Health Check — Selecting Improvement Priorities

Day 2: Demand Inputs and Aggregate Planning

- Forecast Inputs to the MPC Engine — Agreeing the Planning Number
- Chase, Level and Mixed Aggregate Strategies — Setting Family Output Rates
- Workforce and Subcontracting Levers — Costing Capacity Options
- Resource Planning — Testing Aggregate Rates Against Key Constraints
- Planning Calendar and Time Buckets — Fixing System Horizons

Day 3: Material Planning Logic in ERP

- Bills of Materials and Routings — Maintaining Structure Data
- MRP Netting and Offsetting — Tracing How Planned Orders Form
- Lot-Sizing Rules in ERP — Balancing Set-Up and Holding Cost
- Pegging and Exception Messages — Prioritising Planner Actions
- Planning Nervousness — Damping Changes With Firm Orders and Fences

Day 4: Inventory Control Within the System

- ABC Classification of Items — Differentiating Replenishment Rules
- Safety Stock and Safety Lead Time Settings — Protecting Service Levels
- Reorder Point and Periodic Review Policies — Choosing Control Methods
- Cycle Counting Routines — Improving Inventory Record Accuracy
- Slow-Moving and Obsolete Stock Rules — Cleaning Planning Inputs

Day 5: Capacity Requirements Planning

- CRP Logic — Converting Planned and Released Orders to Hours
- Work-Centre Master Data — Setting Efficiency and Utilisation Factors
- Load Profiles — Spotting Overloads Before Release
- Capacity Levelling Options — Shifting Load, Overtime or Alternate Routings
- Finite and Infinite Planning Modes — Choosing System Settings

Day 6: Production Control Systems

- Push, Pull and Hybrid Systems — Matching Control to Product Flow
- Kanban Loops and Card Sizing — Running Pull for Repetitive Parts
- CONWIP Lines — Capping Total Work in Process
- Order Release Rules — Starting Only Ready Jobs
- Control System Selection Matrix — Assigning Methods to Product Families

Day 7: Work in Progress Control

- Little's Law — Linking WIP, Throughput and Lead Time
- Input/Output Reports — Watching Queues at Work Centres
- WIP Ageing Analysis — Exposing Stalled Orders
- WIP Caps by Line — Setting and Reviewing Limits
- Lead Time Quoting From WIP Data — Improving Promise Reliability

Day 8: ERP Planning Modules and Integration

- ERP Planning Module Configuration — Setting Strategy Groups and Profiles
- Manufacturing Execution System Links — Feeding Actual Progress Back
- Planning Master Data Governance — Assigning Owners and Review Cycles
- Parameter Tuning Studies — Testing Lead Times and Lot Sizes
- Planner Workbench Design — Focusing Attention on Exceptions

Day 9: PPC Performance Metrics

- Plan Attainment and Schedule Stability Metrics — Judging System Output
- Inventory Turns and Days of Cover — Reporting Working Capital
- Planning Parameter Accuracy — Comparing Settings With Actuals
- Service Level and Backorder Measures — Tracking Customer Effect
- PPC Scorecard Design — Presenting Metrics to Plant Leadership

Day 10: Practising the MPC System Design Blueprint

- System Mapping Exercise — Applying the Front End, Engine and Back End View
- Parameter Tuning Case — Resetting Lead Times, Lot Sizes and Safety Stock
- WIP Control Simulation — Comparing Push and CONWIP Results
- Peer Review of PPC Scorecards — Challenging Targets and Definitions
- MPC System Design Blueprint — Completing Rules, Parameters and Owners

Applying Manufacturing Planning and Control Systems After the Course

- Compare planned lead times in the ERP system with actual lead times for the twenty highest-volume items and correct the largest gaps.
- Set a CONWIP or kanban limit on one line and track WIP, throughput and lead time weekly for a month.

Manufacturing Planning and Control Systems Questions FAQ

What are manufacturing planning and control systems and why do they matter now?

They are the processes, rules and ERP software that turn demand into material, capacity and shop floor orders. They matter now because automated planning amplifies every poor setting into wrong orders, excess stock and long queues.

Which roles gain most from manufacturing planning and control systems training?

Production control managers, planning engineers, plant managers and ERP planning key users gain most, because they configure the system, own its parameters and answer for its output.

How do manufacturing planning and control systems differ from a demand forecasting course?

They cover the whole chain from planning inputs to work-in-progress control. A demand forecasting course builds the forecast, while this subject designs how the plant's system plans material, capacity and release from it.

What do you bring back from manufacturing planning and control systems training?

You bring back an MPC System Design Blueprint for your plant. It sets control methods by product family, key ERP parameters, WIP limits and the PPC metrics used to judge them.

Manufacturing Planning and Control Systems: The Way Forward

The MPC System Design Blueprint first informs which ERP planning parameters the plant resets in its next review. Production control managers, planning engineers and ERP key users use it to agree control rules and WIP limits. After the first month of use, it is worth revisiting which product families suit pull control, since mix and volume often shift.