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COURSE BROCHURE

# Advanced Production Scheduling and Shop Floor Control Training Course

29 March – 9 April 2027
Singapore

# Advanced Production Scheduling and Shop Floor Control Training Course

**Ref:** 475_17344 **Date:** 29 March – 9 April 2027 **Location:** Singapore **Fees:** 12000 GBP

Production Scheduling and Shop Floor Control is the subject of this 2-week advanced training course for production planners, schedulers and manufacturing managers, who build a Schedule and Dispatch Control Plan for their own plant. Short lead times, mixed product ranges and constrained work centres mean the gap between the master schedule and what the shop floor actually runs decides delivery performance. Jupiter Prime Training delivers this course in production scheduling and shop floor control.

## Why Production Scheduling and Shop Floor Control Matters Now

Three forces sit behind the schedule today: customers who order smaller quantities with less notice, planning systems that can now sequence against finite work-centre capacity, and supervisors who need clear dispatch lists rather than weekly spreadsheets. A plant whose schedules are realistic and controlled keeps promise dates, holds work in progress low and loads its bottleneck fully; a plant whose schedules drift expedites constantly, builds queues and loses trust in every date it quotes. The course rests on the Manufacturing Resource Planning MRP II hierarchy, the Theory of Constraints TOC and Input/Output Control.

## Who Gains Most from Production Scheduling and Shop Floor Control

- Planners who own the master production schedule and its time fences
- Schedulers who sequence orders on work centres and release jobs to the floor
- Managers accountable for output, schedule attainment and work in progress on a production line
- Material planners who run MRP and resolve shortages against the schedule
- Supervisors who dispatch daily work and report progress against plan

A scheduling cell made up of the master scheduler, a shop floor scheduler and a production supervisor gains most when attending together, because the control plan only works when all three share one sequence.

## Production Scheduling and Shop Floor Control Capabilities

Participants leave able to translate the sales and operations plan into a feasible master schedule, sequence work against finite capacity and close the loop between released orders and shop floor progress.

- Design a master production schedule with time fences and available-to-promise logic — informing sales and customer service
- Calculate material and capacity requirements from the schedule — serving material planners and buyers
- Apply sequencing and dispatching rules to finite capacity loads — guiding schedulers and supervisors
- Build bottleneck buffers and release rules — protecting throughput at constrained work centres
- Specify schedule adherence and input/output measures — informing manufacturing managers
- Communicate schedule changes through frozen, slushy and liquid zones — engaging sales and procurement

## Key Production Scheduling and Shop Floor Control Terms

- Master Production Schedule — the statement of which end items will be built, in what quantities and in which periods.
- Time Fence — a boundary in the planning horizon inside which schedule changes need higher approval because cost rises.
- Finite Capacity Scheduling — sequencing orders so that no work centre is loaded beyond the hours it actually has.
- Dispatch List — the ordered list of jobs a work centre should run next, produced by a sequencing rule.
- Schedule Adherence — the share of scheduled orders completed in the right quantity, sequence and period.
- Input/Output Control — comparing planned and actual work entering and leaving a work centre to manage queues.

## Production Scheduling and Shop Floor Control Day by Day

## Day 1: Scheduling in the Planning Hierarchy

- MRP II Planning Hierarchy — Linking Business Plans to Shop Floor Orders
- Make-to-Stock, Make-to-Order and Engineer-to-Order — Choosing Scheduling Points
- Product Families and Routings — Structuring Data for Scheduling
- Food and Automotive Plant Scheduling Cases — Comparing Contrasting Environments
- Scheduling Maturity Baseline — Selecting Improvement Priorities

## Day 2: From Sales and Operations Plan to Master Schedule

- Sales and Operations Planning Output — Setting Family-Level Production Rates
- Disaggregating Family Plans — Converting Rates to End-Item Quantities
- Planning Bills and Option Mixes — Scheduling Configurable Products
- Demand Time Fence and Forecast Consumption — Netting Orders Against Forecast
- Master Schedule Review Calendar — Fixing Who Approves Changes

## Day 3: Master Production Scheduling

- MPS Record Logic — Calculating Projected Available Balance
- Available-to-Promise Calculations — Quoting Reliable Order Dates
- Frozen, Slushy and Liquid Zones — Controlling Schedule Nervousness
- Rough-Cut Capacity Check — Validating the MPS Against Key Resources
- Master Scheduler Role Design — Balancing Sales Requests and Plant Limits

## Day 4: Material Requirements Planning

- Bill of Materials and Lead Time Offsetting — Timing Component Orders
- Lot-Sizing Rules — Weighing Set-Up Cost Against Inventory
- Pegging and Exception Messages — Tracing Shortages to Orders
- Safety Stock and Safety Lead Time — Absorbing Supply Variation
- MRP Data Accuracy Audits — Correcting Records Before Scheduling

## Day 5: Finite Capacity Scheduling

- Infinite Versus Finite Loading — Exposing Hidden Overloads
- Forward and Backward Scheduling — Choosing Start or Due Date Logic
- Gantt Charts and Planning Boards — Visualising Work-Centre Loads
- Advanced Planning and Scheduling Systems — Selecting Finite Scheduling Software
- Set-Up Sequence Matrices — Minimising Changeover Time Between Jobs

## Day 6: Sequencing and Dispatching Rules

- Earliest Due Date and Shortest Processing Time — Comparing Rule Outcomes
- Critical Ratio and Slack Rules — Ranking Late-Risk Jobs
- Johnson's Rule for Two-Stage Flows — Sequencing Paired Work Centres
- Dispatch List Design — Giving Supervisors a Clear Next Job
- Rush Order Policies — Limiting Expediting Damage

## Day 7: Bottleneck Scheduling

- Bottleneck Identification From Queue Data — Locating the Constraint
- Drum-Buffer-Rope Release — Pacing Order Release to the Constraint
- Time Buffers and Buffer Penetration — Signalling Jobs at Risk
- Constraint Set-Up Reduction — Recovering Lost Bottleneck Hours
- Alternate Routings and Overtime Decisions — Relieving Temporary Overloads

## Day 8: Shop Floor Control

- Order Release and Work Order Packs — Starting Jobs Ready to Run
- Input/Output Control Reports — Managing Queues at Work Centres
- Production Activity Reporting — Capturing Progress From the Floor
- Manufacturing Execution Systems — Linking Schedules to Live Status
- Daily Production Meetings — Resolving Deviations From the Schedule

## Day 9: Measuring Schedule Performance

- Schedule Adherence and Attainment Metrics — Separating Volume From Sequence
- Work in Progress and Lead Time Measures — Applying Little's Law
- On-Time-In-Full Delivery — Linking Plant Schedules to Customer Outcomes
- Schedule Change Logs — Diagnosing Causes of Instability
- Planning Performance Dashboards — Reporting to Manufacturing Leadership

## Day 10: Practising the Schedule and Dispatch Control Plan

- Master Schedule Case — Applying Time Fences and Available-to-Promise
- Finite Loading Exercise — Sequencing a Mixed Order Book
- Bottleneck Release Simulation — Testing Buffer and Release Rules
- Peer Review of Adherence Measures — Challenging Targets and Definitions
- Schedule and Dispatch Control Plan — Completing Rules, Owners and Measures

## Applying Production Scheduling and Shop Floor Control After the Course

- Measure schedule adherence on one line for four weeks and log every schedule change with its cause.
- Run input/output control at the main bottleneck work centre and set a queue target with its supervisor.

## Production Scheduling and Shop Floor Control Questions FAQ

### What is production scheduling and shop floor control and why does it matter now?

It is the discipline of turning the master schedule into a sequence each work centre can run and then tracking execution. It matters now because smaller, faster orders expose any schedule that ignores finite capacity.

### Which roles gain most from production scheduling and shop floor control training?

Master schedulers, shop floor schedulers, material planners and production managers gain most, because they set the dates, sequences and release rules that decide delivery and work in progress.

### How does production scheduling and shop floor control differ from a general operations management course?

It works at the level of orders, work centres and dispatch lists rather than strategy. A general operations management course covers process design and improvement, while this subject builds feasible schedules and controls their execution.

## What do you bring back from production scheduling and shop floor control training?

You bring back a Schedule and Dispatch Control Plan for your plant. It sets time fences, sequencing rules, bottleneck release and adherence measures, ready to agree with sales and the shop floor.

## Production Scheduling and Shop Floor Control: The Way Forward

The Schedule and Dispatch Control Plan first informs how far ahead the master schedule is frozen and how orders reach the floor. Master schedulers, shop floor schedulers and supervisors use it to share one sequence and one set of measures. After its first month, it is worth revisiting which dispatching rule actually protected due dates, since order mix often changes the answer.