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COURSE BROCHURE

# Supply Chain Modelling and Inventory Placement Training Course

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Registered in the United Kingdom and Saudi Arabia

# Supply Chain Modelling and Inventory Placement Training Course

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Supply Chain Modelling and Inventory Placement is a 1-week training course for supply chain planners, network analysts and operations managers, in which each participant builds a stock positioning model with tested disruption scenarios. Volatile demand, longer supplier lead times and pressure on working capital mean organisations can no longer set stock levels and site capacity by habit. Jupiter Prime Training delivers this course on Supply Chain Modelling and Inventory Placement.

## Why Supply Chain Modelling and Inventory Placement Matters Now

Three forces push planners towards quantitative models. Finance directors watch the cash tied up in stock and question every extra week of cover. Customers and internal users expect shorter, more reliable replenishment, so service targets keep rising. Suppliers and carriers face port congestion, capacity swings and sudden closures. A planning function that models these trade-offs can show where buffer stock protects service and where it simply ties up cash. A function relying on rules of thumb overstocks slow items and finds capacity limits only when disruption arrives.

## Who Gains Most from Supply Chain Modelling and Inventory Placement

- Planners who set reorder points, safety stock and replenishment frequencies by item and location
- Analysts who prepare demand, lead-time and cost records for quantitative models
- Operations managers responsible for warehouse, plant or depot throughput limits
- Specialists who compare transport lanes, consolidation points and delivery frequencies
- Continuity owners who must show how the flow of goods behaves under stress

Planning groups that send a planner, an analyst and an operations manager together gain most, so one model reflects stock, capacity and cost.

## Supply Chain Modelling and Inventory Placement Capabilities

Participants turn transaction records into models showing where stock should sit.

- Build a cleaned data set of demand, lead times and unit costs — analysts preparing model inputs
- Calculate safety stock and reorder points by service level — planners setting stock policy
- Design a spreadsheet optimisation model for flows and node capacity — operations managers sizing sites
- Weigh centralised against forward stock positions — finance directors watching working capital
- Test disruption scenarios with simple simulation — continuity owners and senior operations leaders
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Communicate model results as clear options with trade-offs — leadership deciding on stock and capacity

## Key Supply Chain Modelling and Inventory Placement Terms

- Safety stock — extra inventory held to absorb variation in demand and replenishment lead time.
- Service level — the probability, set as a target, that stock covers demand during a replenishment cycle.
- Echelon — one tier of stocking points, such as central warehouse, regional depot or forward store.
- Linear programming — a mathematical method that finds the lowest-cost flow plan within stated capacity and demand limits.
- Random sampling simulation — repeated sampling of uncertain inputs to show the spread of possible outcomes.
- Bottleneck — the node or lane whose capacity limits the throughput of the whole flow.

## Supply Chain Modelling and Inventory Placement Day by Day

### Day 1: Modelling Purpose and Flow Mapping

- Flow Map of Nodes and Lanes — Defining What the Model Must Represent
- Decision Questions Register — Choosing Stock, Capacity or Cost as the Focus
- Demand and Lead-Time Extraction — Cleaning Transaction Records for Model Inputs
- Unit Cost Build-Up — Holding, Ordering, Handling and Transport Cost Elements
- Model Scope Statement — Agreeing Level of Detail With Operations Stakeholders

### Day 2: Inventory Placement Methods

- Demand Variability Profiling — Segmenting Items by Volume and Volatility
- Safety Stock Formula by Service Level — Setting Cover for Each Location
- Single and Multi-Echelon Stock Comparison — Central Versus Forward Positions
- Reorder Point and Review Period Rules — Balancing Ordering Effort and Cover
- Working Capital Impact Sheet — Showing Finance the Cost of Each Policy

### Day 3: Capacity and Flow Optimisation

- Spreadsheet Solver Set-Up — Decision Variables, Constraints and Cost Objective
- Node Throughput Limits — Modelling Warehouse, Plant and Depot Capacity
- Lane Cost and Frequency Choices — Consolidation Against Direct Delivery Options
- Bottleneck Identification — Finding the Constraint That Limits Total Flow
- Sensitivity Tables — Testing How Results Shift With Cost and Demand

### Day 4: Disruption Scenarios and Simulation

- Scenario Library Design — Supplier Closure, Lane Delay and Demand Surge Cases
- Random Lead-Time Sampling — Estimating Stock-Out Risk Under Uncertainty
- Time-to-Recover Estimate — Judging How Long Each Node Can Withstand Loss
- Buffer Repositioning Options — Moving Stock Before or During a Disruption
- Model Validation Checks — Comparing Model Output With Recent Actual Flows

## Day 5: Practising the Stock Positioning Model

- Input Data Review — Applying Cleaning Rules to a Participant Case
- Placement Policy Run — Safety Stock and Echelon Choices for the Case
- Capacity and Scenario Run — Combining Solver Results With Disruption Tests
- Options Briefing Rehearsal — Presenting Trade-Offs to Operations and Finance Leaders
- Stock Positioning Model — Final Version With Assumptions and Scenario Results

## Applying Supply Chain Modelling and Inventory Placement After the Course

- Recalculate safety stock for the top fifty items at one site using the service-level formula.
- Run two disruption scenarios on the participant's own flow map.

## Supply Chain Modelling and Inventory Placement Questions FAQ

### What is supply chain modelling and inventory placement, and why does it matter now?

It is the use of quantitative models to decide where stock should sit and how much capacity each site needs. It matters now because volatile demand, longer lead times and cash pressure make rule-of-thumb stock levels costly.

### Which roles gain most from supply chain modelling and inventory placement?

Supply chain planners, network analysts and operations managers gain most. Teams attending together build one shared model.

### How does supply chain modelling and inventory placement differ from a network strategy course?

It is hands-on modelling rather than footprint strategy. A strategy course decides which sites an organisation should own; this course builds the stock, capacity and scenario calculations that test those choices.

### What do you bring back from supply chain modelling and inventory placement?

You bring back a working spreadsheet model for one case, with safety stock settings, capacity limits and tested disruption scenarios.

## Supply Chain Modelling and Inventory Placement: The Way Forward

The stock positioning model first informs how much buffer stock each location should hold next season. Planners use it to set policy, operations managers to check capacity and finance to see the cash effect. After its first use, revisit the scenario library: new suppliers, lanes or demand patterns change which disruptions matter most and where buffers protect service.