Logistics Optimisation with AI Training Course: Demand, Routes and Delivery Performance

23 – 27 August 2027
Cape town

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Programme Summary

Logistics optimisation with AI is the subject of this one-week training course for logistics, transport and fleet operations leaders at managerial level, ending in an AI operations pack for one distribution network. Demand swings, route changes and late deliveries strain plans built on fixed rules, while AI tools promise gains that are hard to check. The programme moves from use cases and data to demand forecasts, route and capacity plans, delivery performance and supplier control, using prepared shipment and fleet records. Mars Training Centre UK delivers this programme on logistics optimisation with AI to mixed-organisation cohorts.

The Business Case

Carriers, retailers, ports and manufacturers move goods under tight limits, and small planning errors repeat across many trips. Leaders who can judge a forecast, test a routing recommendation against operating limits and hold suppliers to service terms spend less on weak tools.

- Delivery Reliability: Improves when late deliveries are traced to forecast, route or capacity causes and tested fixes are applied.
- Transport Cost per Unit: Falls when route and load plans are compared against operating limits before adoption.
- Supplier Performance: Is controlled when service terms, data rights and exit conditions are agreed before tools are deployed.

Principles and Evidence Base

- Vehicle routing problem: The operations research model behind route optimisation tools, applied in Session 3 to judge route and load recommendations.
- Forecast error measures: The basis for judging demand and capacity forecasts, applied in Sessions 2 and 4 to compare AI and baseline methods.
- ISO 28000: The international specification for supply chain security management systems, applied in Session 4 to set security and supplier controls.

Intended Participants

- Operations leaders who own transport networks, depots and delivery performance.
- Fleet and freight managers who plan routes, vehicles and carrier capacity.
- Supply chain planners who prepare demand and capacity forecasts for distribution.
- Technology and procurement leads who select and manage logistics software suppliers.
- Risk and security managers who review cargo, data and supplier exposure.

Typical settings include freight and haulage, retail distribution, ports and manufacturing logistics.

Learning Outcomes

1. Participants will be able to evaluate logistics decisions for AI suitability by value, data readiness and risk.
2. Participants will be able to compare AI and baseline demand forecasts by error and bias.
3. Participants will be able to construct a route and capacity test that checks a recommendation against operating limits.
4. Participants will be able to diagnose causes of late or failed deliveries using shipment and fleet records.
5. Participants will be able to prioritise supplier terms, security controls and exit conditions for logistics AI tools.
6. Participants will be able to justify an AI operations pack to an operations board.

Programme Structure

Day 1: Logistics Optimisation with AI Use Cases and Data

Which logistics decisions justify an AI tool?

- Logistics Decision Inventory
- Shipment and Fleet Data Audit
- Value and Risk Screening Grid
- Baseline Method Comparison
- Use Case Shortlist Sheet

Day 2: Demand and Capacity Forecasts

How is a demand or capacity forecast judged against actual volumes?

- Forecast Error and Bias Table
- Seasonality and Event Review
- Horizon Accuracy Grid
- Capacity Buffer Calculation
- Forecast Override Log

Day 3: Route Planning and Load Design

How is a routing recommendation tested before drivers follow it?

- Vehicle Routing Problem Framing
- Operating Limit Register
- Route Comparison Matrix
- Load Consolidation Check
- Dispatch Exception Rules

Day 4: Delivery Performance and Supplier Control

Why do deliveries fail, and who is accountable for the fix?

- Late Delivery Cause Tree
- Service Level Dashboard Design
- Supplier Claim Test Sheet
- ISO 28000 Control Mapping
- Data Rights and Exit Terms

Day 5: AI Operations Pack for One Distribution Network

Do the findings join into a pack a board can approve?

- Applying the Session 1 Shortlist
- Testing the Session 2 Error Table
- Checking the Session 3 Operating Limit Register
- Reviewing the Session 4 Supplier Test Sheet
- Completing the AI Operations Pack

Methodology

The programme is a data workshop built on prepared shipment histories, vehicle records and delivery logs for a retail distribution network and a regional haulier. Participants read forecast tests, compare route plans, trace failures and question supplier claims, then defend a pack to peers acting as an operations board.

- Suggested activity: Comparing a baseline and an AI demand forecast for three depots.
- Suggested activity: Testing a recommended route plan against vehicle, driver and time limits.
- Suggested activity: Scoring a supplier proposal with the supplier claim test sheet.

Capstone Output

Each participant completes an AI operations pack for one distribution network. It holds the use case shortlist, a forecast error table, an operating limit register, a delivery cause analysis and a supplier test sheet. At work it goes to the operations board for approval and sets the routine for testing later AI proposals.

Frequently Asked Questions

Is logistics optimisation with AI suitable for managers who are not data scientists?

Yes. Logistics optimisation with AI is taught through prepared shipment and fleet records and templates. You need responsibility for transport, distribution or supplier decisions, but no programming or statistics background.

Which standard does logistics optimisation with AI rest on in this programme?

Logistics optimisation with AI here rests on the vehicle routing problem model, forecast error measures and ISO 28000, each applied to a routing, forecasting or supplier control decision.

How is the AI operations pack from logistics optimisation with AI used at work?

You take the AI operations pack to your operations board, use its operating limit register to test route recommendations, and keep its supplier test sheet as the routine for later proposals.

How does logistics optimisation with AI differ from a programme on warehouse management?

Logistics optimisation with AI concentrates on testing and governing forecasts, routes and supplier tools across a network, while a programme on warehouse management concentrates on storage layout, picking and stock control.