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COURSE BROCHURE

Closed-Loop Supply Chain Network Design Training Course

6 – 10 June 2027
Muscat

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Registered in the United Kingdom and Saudi Arabia

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Closed-Loop Supply Chain Network Design is a 1-week training course for supply chain designers and sustainability leads who shape how products return, recover and re-enter use, and it ends with a closed-loop network concept for one product family. Material scarcity, producer responsibility rules and customer expectations now push organisations to plan the return path as carefully as the outbound one. Jupiter Prime Training delivers this course on Closed-Loop Supply Chain Network Design.

Why Closed-Loop Supply Chain Network Design Matters Now

Three forces shape closed-loop design today. Volatile prices for metals, polymers and electronic components make recovered material an asset rather than waste. Extended producer responsibility rules in many markets oblige brand owners to collect and treat what they sell. Customers also expect products to stay in use for longer. An organisation that designs its recovery network well secures cheaper inputs, steadier compliance and new service revenue; one that neglects returns carries rising disposal costs and lost cores. The course rests on general circular economy principles and on proven reverse network modelling methods.

Who Gains Most from Closed-Loop Supply Chain Network Design

- Network designers responsible for siting collection points, hubs and recovery plants
- Sustainability leads responsible for circularity targets and material recovery evidence
- Product and packaging engineers responsible for disassembly, repair and component reuse
- Aftermarket and service planners responsible for core returns and refurbished stock
- Commercial and finance partners responsible for the economics of take-back offers

A cross-functional product family team gains most attending together, so design, logistics and finance agree one recovery logic.

Closed-Loop Supply Chain Network Design Capabilities

Participants treat the return loop as a designed system linking product architecture to hubs, flows and contracts.

- Assess which product families suit repair, remanufacture or material recovery — portfolio prioritisation
- Specify design for recovery requirements for engineers and suppliers — product briefs
- Design collection and take-back channels that fit customer behaviour — commercial leadership
- Calculate closed-loop network economics including core value and recovery yield — finance approval
- Build material passport content that travels with each product — downstream recovery partners

- Communicate a phased recovery network concept to senior sponsors — investment decisions

Key Closed-Loop Supply Chain Network Design Terms

- Closed-loop supply chain — a supply chain in which used products return to the producer for recovery.
- Remanufacturing — restoring a used product to as-new performance through disassembly, repair and testing.
- Core — a used product or component returned so it can be remanufactured.
- Take-back scheme — an arrangement through which a producer collects its products from customers at end of use.
- Material passport — a digital record of a product's materials, parts and joints, used to plan recovery.
- Recovery yield — the share of returned products restored or reused rather than discarded.

Closed-Loop Supply Chain Network Design Day by Day

Day 1: Circular Loops and Their Drivers

- Value Retention Hierarchy — Choosing Reuse, Repair, Remanufacture or Recycling
- Material Flow Mapping — Locating Leakage Points Across the Product Life
- Producer Responsibility Obligations — Shaping Collection Targets and Reporting Duties
- Product Family Screening — Selecting Candidates for a Recovery Loop
- Stakeholder Map of the Return Loop — Aligning Customers, Partners and Recyclers

Day 2: Design for Recovery

- Disassembly Sequence Analysis — Reducing Time and Damage at Teardown
- Modular Architecture Choices — Enabling Component Swap and Upgrade
- Material Selection for Recyclability — Avoiding Mixed and Bonded Materials
- Material Passport Content — Recording Parts, Joints and Substances
- Supplier Design Requirements — Writing Recovery Clauses Into Product Briefs

Day 3: Take-Back and Reverse Network Structure

- Collection Channel Options — Comparing Retail Drop-Off, Courier and Deposit Return
- Core Acquisition Incentives — Setting Buy-Back Credits and Exchange Terms
- Grading and Triage Rules — Routing Returns to the Right Recovery Path
- Hub and Recovery Plant Siting — Balancing Transport Distance Against Plant Scale
- Centralised Versus Distributed Remanufacturing — Matching Volumes to Capacity

Day 4: Closed-Loop Network Economics

- Core Value and Return Rate Forecasting — Sizing Volumes Under Uncertainty
- Recovery Cost Model — Comparing Unit Cost With New Production
- Scenario Modelling of Network Options — Testing Sensitivity to Yield and Price
- Product-as-a-Service Offers — Keeping Ownership to Secure Returns
- Circularity Indicators — Tracking Recovered Content and Landfill Avoided

Day 5: Practising the Closed-Loop Network Concept

- Screening Result Review — Confirming the Chosen Product Family
- Design for Recovery Brief — Agreeing Changes With Engineering
- Take-Back Channel and Hub Layout — Drawing the Return Flow
- Economic Case and Scenarios — Stress-Testing the Recovery Case
- Closed-Loop Network Concept — Presenting the Phased Recovery Plan to Sponsors

Applying Closed-Loop Supply Chain Network Design After the Course

- Run a disassembly sequence analysis on one current product and pass the findings to its design owner.
- Build a core value and return rate forecast for one product family and use it to compare two take-back channel options.

Closed-Loop Supply Chain Network Design Questions FAQ

What is closed-loop supply chain network design and why does it matter now?

Closed-loop supply chain network design is the planning of how used products come back and are recovered. It matters now because material costs, producer responsibility rules and customer expectations make recovered products and parts valuable and returns costly to ignore.

Which roles gain most from closed-loop supply chain network design training?

Network designers, sustainability leads, engineers, aftermarket planners and commercial partners gain most. Each holds part of the recovery loop and gains a shared way to judge design, channels and economics.

How does closed-loop supply chain network design differ from a general reverse logistics course?

Closed-loop design starts with the product and the value it retains, not only with moving returns. Reverse logistics centres on handling returns; this course links product architecture, material passports and take-back economics.

What do you bring back from closed-loop supply chain network design training?

You bring back a closed-loop network concept for one product family. It sets out the recovery route, design requirements, take-back channel, hub layout and a tested economic case.

Closed-Loop Supply Chain Network Design: The Way Forward

The closed-loop network concept first informs which product family receives recovery investment and which design changes engineering adopts. Product, logistics and finance owners use it to agree take-back terms and hub capacity. After a year of returns, revisit the core volume and recovery yield forecast, since real return behaviour reshapes hub layout and incentives.