Cold Chain Manufacturing Logistics Training Course

Professional Development Training Course Outline

Category	Manufacturing	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Cold chain manufacturing logistics is a critical pillar of modern global supply chains, ensuring the safe, temperature-controlled movement of perishable goods such as pharmaceuticals, vaccines, biologics, dairy, meat, seafood, and fresh produce. In an era driven by GDP compliance, ESG standards, IoT-enabled tracking, AI-powered forecasting, and supply chain resilience, organizations must adopt advanced cold chain systems to minimize spoilage, ensure regulatory compliance, and maintain product integrity from production to final delivery.

Cold Chain Manufacturing Logistics Training Course provides a comprehensive, industry-focused deep dive into temperature-controlled logistics, cold storage optimization, refrigerated transportation systems, real-time monitoring technologies, and end-to-end cold chain visibility. Participants will gain practical and strategic competencies aligned with global standards such as WHO GDP, ISO 22000, HACCP, FDA Cold Chain Regulations, and EU GMP, enabling them to build resilient, efficient, and digitally enabled cold chain networks.

Programme Curriculum

Cold Chain Manufacturing Logistics Training Course

Introduction

Cold chain manufacturing logistics is a critical pillar of modern global supply chains, ensuring the safe, temperature-controlled movement of perishable goods such as pharmaceuticals, vaccines, biologics, dairy, meat, seafood, and fresh produce. In an era driven by GDP compliance, ESG standards, IoT-enabled tracking, AI-powered forecasting, and supply chain resilience, organizations must adopt advanced cold chain systems to minimize spoilage, ensure regulatory compliance, and maintain product integrity from production to final delivery.

Cold Chain Manufacturing Logistics Training Course provides a comprehensive, industry-focused deep dive into temperature-controlled logistics, cold storage optimization, refrigerated transportation systems, real-time monitoring technologies, and end-to-end cold chain visibility. Participants will gain practical and strategic competencies aligned with global standards such as WHO GDP, ISO 22000, HACCP, FDA Cold Chain Regulations, and EU GMP, enabling them to build resilient, efficient, and digitally enabled cold chain networks.

Course Duration

10 days

Course Objectives

1. Master Cold Chain Supply Chain Optimization Strategies
2. Understand GDP (Good Distribution Practice) Compliance Standards
3. Implement IoT-Based Temperature Monitoring Systems
4. Develop End-to-End Cold Chain Visibility Solutions
5. Apply AI-Driven Demand Forecasting in Perishables Logistics
6. Enhance Cold Storage Warehouse Automation Techniques
7. Strengthen Pharmaceutical Cold Chain Integrity Controls
8. Optimize Refrigerated Transport & Fleet Management
9. Reduce wastage through Last-Mile Cold Chain Delivery Optimization
10. Ensure compliance with HACCP & ISO Food Safety Standards
11. Design Sustainable and Green Cold Chain Logistics Systems
12. Improve Risk Management in Temperature-Sensitive Supply Chains
13. Leverage Blockchain for Cold Chain Traceability & Transparency

Target Audience

1. Supply Chain & Logistics Managers
2. Pharmaceutical Industry Professionals
3. Food & Beverage Quality Assurance Teams
4. Cold Storage Warehouse Operators
5. Distribution & Transportation Managers
6. Healthcare & Vaccine Supply Coordinators
7. Import/Export and Trade Compliance Officers
8. Operations and Production Managers in FMCG

Course Modules

Module 1: Introduction to Cold Chain Logistics

- Basics of temperature-controlled supply chains
- Importance in pharmaceuticals & food sectors
- Cold chain failure impact analysis
- Key industry regulations overview
- Cold chain ecosystem mapping
- **Case Study:** Vaccine distribution challenges during global pandemic logistics disruptions

Module 2: Cold Chain Infrastructure Design

- Cold storage facility layout planning
- Insulated packaging technologies

- Refrigeration system selection
- Energy-efficient warehouse design
- Modular cold room systems
- **Case Study:** Large-scale dairy cold storage optimization in export facilities

Module 3: GDP & Regulatory Compliance

- WHO GDP guidelines
- FDA cold chain requirements
- EU pharmaceutical logistics standards
- Documentation and audit readiness
- Compliance risk mitigation
- **Case Study:** Pharmaceutical recall due to GDP non-compliance

Module 4: Temperature Monitoring Technologies

- IoT sensors in cold chain
- Real-time temperature tracking systems
- Cloud-based dashboards
- Alert and exception management
- Data logging compliance tools
- **Case Study:** Seafood export quality preservation using IoT monitoring

Module 5: Cold Storage Warehouse Management

- Inventory zoning strategies
- FIFO and FEFO systems
- Automation in cold warehouses
- Energy optimization techniques
- Storage optimization analytics
- **Case Study:** Frozen food warehouse efficiency improvement project

Module 6: Refrigerated Transportation Systems

- Reefer truck operations
- Air, sea, and multimodal cold transport
- Temperature mapping in transit
- Fleet tracking technologies
- Fuel efficiency strategies
- **Case Study:** Cross-border pharma transport under strict temperature control

Module 7: Packaging for Cold Chain Integrity

- Thermal packaging materials
- Dry ice and gel pack usage
- Vacuum insulation techniques
- Sustainable packaging solutions
- Packaging validation testing
- **Case Study:** Biologics shipment packaging failure analysis and redesign

Module 8: Risk Management in Cold Chain

- Risk identification frameworks
- Contingency planning strategies
- Spoilage prevention systems
- Insurance in cold logistics
- Emergency response protocols
- **Case Study:** Cold chain disruption during port delay crisis

Module 9: AI & Predictive Analytics

- Demand forecasting for perishables
- Machine learning in logistics planning
- Predictive maintenance for equipment
- Route optimization algorithms
- Smart inventory planning
- **Case Study:** AI-based demand prediction for fresh produce retail supply

Module 10: Blockchain in Cold Chain

- Traceability systems
- Immutable temperature records
- Smart contracts in logistics
- Supply chain transparency
- Fraud prevention mechanisms
- **Case Study:** Vaccine authenticity tracking using blockchain ledger

Module 11: Sustainable Cold Chain Practices

- Green refrigeration systems
- Carbon footprint reduction
- Renewable energy cold storage
- Waste minimization strategies
- ESG compliance reporting
- **Case Study:** Solar-powered cold storage in rural agricultural distribution

Module 12: Last-Mile Cold Chain Delivery

- Urban distribution challenges
- Micro cold storage hubs
- Delivery route optimization
- Customer-centric logistics models
- Real-time delivery tracking
- **Case Study:** E-commerce frozen food last-mile delivery innovation

Module 13: Quality Assurance Systems

- HACCP implementation
- Quality inspection checkpoints
- Shelf-life monitoring
- Product integrity validation
- Audit documentation systems
- **Case Study:** Meat export rejection due to QA system failure

Module 14: Cold Chain Data Analytics

- Big data in logistics
- KPI tracking systems
- Temperature deviation analytics
- Performance dashboards
- Continuous improvement models
- **Case Study:** Retail cold chain loss reduction through data analytics

Module 15: Global Cold Chain Strategy

- International logistics planning
- Cross-border compliance frameworks
- Trade route optimization
- Market-specific cold chain adaptation
- Strategic supply chain resilience
- **Case Study:** Global vaccine distribution strategy across multiple continents

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com