

Teaching Pedagogy/Methodology:

- **Lectures:** Introduction to lean principles, TPS, and process optimization techniques.
- **Case Studies:** Analysis of real-world applications of lean inventory and operations management.
- **Workshops:** Hands-on sessions on value stream mapping, JIT implementation, and Kanban systems.
- **Simulations:** Use of digital tools for inventory management and performance analysis.
- **Group Projects:** Collaborative projects to design and implement lean systems in simulated environments.

SWAYAM Reference: SWAYAM references for blended learning (as NEP 2020 recommends integrating online modules. Since SWAYAM directly doesn't have a course titled " *Lean Inventory and Operations Management* ", the closest and most relevant course available is:

https://onlinecourses.swayam2.ac.in/imb24_mg119/preview

https://onlinecourses.nptel.ac.in/noc20_mg06/preview

https://onlinecourses.nptel.ac.in/noc20_mg17/preview

https://onlinecourses.nptel.ac.in/noc24_hs128/preview

Semester-VIII
DISCIPLINE SPECIFIC ELECTIVE (DSE-8.1)
Advanced Logistics and Distribution Strategies
Offered by Commerce Department, College of Vocational Studies

Credit Distribution, Eligibility and Pre-requisites the Course

Course Title & Code	Total Credits	Lectures	Tutorial	Practical	Eligibility	Prerequisite of the course
Advanced Logistics and Distribution Strategies	4	3	1	-		

Learning Objectives:

- To explore advanced logistics concepts and strategies for optimizing the movement of goods within the supply chain.

- To understand and implement distribution strategies that enhance customer satisfaction and operational efficiency.
- To analyze the role of technology in modern logistics, including digital tools, AI, and automation.
- To develop skills in managing global logistics and distribution networks, considering economic, cultural, and regulatory factors.
- To examine innovative trends in logistics such as last-mile delivery and green logistics, contributing to sustainable supply chain practices.

Learning Outcome:

Upon successful completion of this course, students will be able to:

1. Design and implement advanced logistics strategies to optimize goods movement across the supply chain.
2. Develop distribution strategies tailored to customer needs, cost efficiency, and service excellence.
3. Analyze the integration of digital tools and technologies, such as AI and IoT, into logistics and distribution networks.
4. Manage logistics operations on a global scale, navigating challenges related to international trade, regulations, and cultural differences.
5. Apply sustainable logistics practices and evaluate innovations like last-mile delivery solutions and green logistics.

Course Outline

Unit	Contents	
Unit I	Strategic Logistics Management and Sustainable Networks: Design of global and regional distribution networks, facility location decisions, integrating sustainability into logistics management by considering carbon footprints, eco-friendly packaging, and green supply chains.	(10 Hours)
Unit II	Third-Party and Fourth-Party Logistics (3PL/4PL) with Digital Integration: Roles, benefits, and contract management, integration of digital platforms (e.g., Blockchain, IoT) for real-time tracking, enhancing collaboration between 3PL/4PL providers and clients.	(11 Hours)
Unit III	Multi-Modal Transport Strategies and Intelligent Systems: Integration of road, rail, air, and sea transport in distribution planning, utilizing smart transportation technologies like AI and machine learning for dynamic route optimization, and leveraging autonomous vehicles and drones in logistics.	(12 Hours)
Unit IV	Last-Mile Delivery Optimization and AI-Driven Solutions: Urban logistics, delivery routing, time-window constraints, and the use of AI, predictive analytics, and machine learning to optimize last-mile delivery, minimizing delivery time, cost, and emissions.	(12 Hours)

Suggestive Reading Materials/References:

1. **Ballou, R. H.** (2007). *Business Logistics/Supply Chain Management: Planning, Organization, and Control*. Pearson.
2. **Christopher, M.** (2016). *Logistics & Supply Chain Management: Creating Value-Added Networks*. Pearson.
3. **Coyle, J. J., Langley, C. J., Novack, R. A., & Gibson, B. J.** (2016). *Supply Chain Management: A Logistics Perspective*. Cengage Learning.
4. **Rushton, A., Croucher, P., & Baker, P.** (2017). *The Handbook of Logistics and Distribution Management: Understanding the Supply Chain*. Kogan Page.
5. **Harrison, A., & Van Hoek, R.** (2014). *Logistics Management and Strategy: Competing Through the Supply Chain*. Pearson.
6. **Jahre, M., & Heiser, D.** (2016). *Global Logistics and Distribution Planning: Strategies for Management*. Kogan Page.
7. **Kabir, M. A., Khan, S. A., Gunasekaran, A., & Mubarik, M. S.** (2025). Multi-criteria decision making to explore the relationship between supply chain mapping and performance. *Decision Analytics Journal*, 100577.
8. **Mangan, J., & Lalwani, C.** (2016). *Global logistics and supply chain management*. John Wiley & Sons.
9. **Carter, C.R., & Easton, P.L.** (2011). *Sustainable Supply Chain Management: Evolution and Future Directions*. *International Journal of Physical Distribution & Logistics Management*.

Teaching Pedagogy/Methodology:

- **Lectures:** Introduction to advanced logistics concepts and distribution strategies.
- **Case Studies:** Real-world examples of logistics optimization, distribution network design, and technology integration.
- **Workshops:** Hands-on sessions on using digital tools for logistics management, inventory optimization, and last-mile delivery solutions.
- **Guest Lectures:** Industry experts sharing insights on global logistics challenges and best practices in distribution strategies.
- **Group Projects:** Design and simulate a comprehensive logistics strategy for a global supply chain, considering economic, cultural, and regulatory factors.

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