Elective Course 7: Warehouse management

Course Type:	PS: Program Specialisation	Course Credits:	2
Course Code:	O3SE515	Course Duration:	30 Hours

Course Objectives:

- Familiarize students with fundamental concepts, practices, and operations of warehouse management.
- Equip students with practical skills in warehouse layout design, space utilization, and inventory management.
- Develop analytical capabilities for optimizing warehouse processes, including receiving, storage, picking, and dispatch.
- Enable application of technology solutions, such as WMS and automated warehousing systems.
- Cultivate understanding of contemporary warehouse management challenges, including safety, security, and efficiency improvements.

Course Outcome:

- CO1: Remember the fundamental concepts of warehouse management and retain the basic
- CO2: Understand role of warehouse management in supply chain operations
- CO3: Apply safety, security, and sustainability practices in warehouse management
- CO4: Analyse warehouse layout and design principles to optimize efficiency and cost- effectiveness
- CO5: Evaluate inventory management strategies and warehouse performance metrics
- CO6: Create an effective warehouse design plan, incorporating modern technologies and best practices for inventory and storage management.

Sr. No.	Content	CO Mapping	Hours Assigned
1	Introduction to Warehouse Management: Role of Warehouses in business Types of warehouses (public, private, bonded, fulfilment centres, etc.)Functions of a warehouse Key challenges in warehouse management	CO1	3
2	Warehousing Strategies, Operations, Lean & Agile Warehousing Strategies Receiving, Storing, and Dispatching Performance Metrics in Warehousing	CO1	3
3	Warehouse Operations & Processes: Receiving, put-away, and storage operations Picking, packing, and shipping processes Cross-docking and trans-shipment Reverse logistics and returns management	CO2	3
4	Warehouse Layout and Design: Factors Affecting Warehouse Layout Principles of Warehouse Design Warehouse Location Selection Space Utilization & Storage System Material handling equipment (conveyors, forklifts, AS/RS, etc.)	CO2	3
5	Warehousing Inventory Management Inventory control techniques (FIFO, LIFO, JIT, EOQ, etc.) Demand forecasting and stock replenishment Role of barcoding & RFID in inventory tracking Cycle counting vs. annual inventory audits	CO2, CO3	3
6	Technology & Automation in Warehousing Warehouse Management Systems (WMS) Use of Barcoding, RFID, and IoT in Warehousing Role of Robotics and AI in Warehouse Automation ERP Integration for Warehouse Operations	CO1, CO4	3

7	Warehouse Safety, Security, and Sustainability Warehouse Safety Standards & OSHA Guidelines Security Measures: Theft Prevention & Risk Management	CO5	3
8	Green Warehousing & Sustainability Practices Reverse Logistics and Waste Management	CO2	3
9	Emerging Trends Global Best Practices in Warehousing Omnichannel Warehousing and E-commerce Trends	CO1, CO2	3
10	Resilience in Warehouse Management (Post-COVID Adaptations)	CO1, CO6	3

Textbooks:

1. Logistics and supply chain management by Christopher, M. (2016). (5th ed.). Pearson
2. Operations and supply chain management by Jacobs, F. R., & Chase, R. B. (2022). (16th ed.). McGraw-Hill.
3. Designing and managing the supply chain: Concepts, strategies, and case studies by Simchi-Levi, D., Kaminsky, P., & Simchi-Levi, McGraw-Hill

Reference Books:

1. The warehouse: How robots, AI, and blockchain are redefining a world of work and supply chains by Schenker, J. Prestige Professional Publishing