Logistics and Material Handling

Course Objectives

This course will provide an understanding to the advanced concepts and practices in material handling and internal logistics. It also gives a comprehensive coverage of both traditional and contemporary topics in internal logistics and material handling.

Syllabus

Logistics Management, Integrated Logistics system, Logistics Network, 3PLs and 4PLs, Ware Housing – Warehouse Layout design, Logistics Information Systems, Material Planning, Material Handling, Transportation, Inventories.

Expected Outcomes

After completing the course, the students are able to gain a fair understanding on contemporary topics in internal logistics and material handling. The course will equip the participants to deal strategically issues and challenges in internal logistics, international logistics and Logistics.

References

1. Martin Christoper, Logistics and Supply Chain Management, FT Publishing International, 2016

2. Ronald H. Ballou, Business Logistics and Supply Chain Management, Pearson Education, 2007

3. Stephens, M. P & , F. E, Manufacturing Facilities Design and Material Handling, Purdue University Press, 2013

4. Agarwal, D. K, Textbook of Logistics and Supply Chain Management, Mac Millan India Ltd, 2003

5. Chase, RB, Jacobs, FR and Aquilano, NJ, Operations Management for Competitive Advantage, Irwin Professional Pub; 2004

6. Krishnaveni Muthiah(2009). Logistics Management and Seaborne Trade, Himalaya Publishing House, 2014

Unit Topics.

1 Introduction: Concepts of Logistics- Evolution, Nature and Importance, Components of Logistics Management- Competitive Advantages of Logistics- functions of Logistics management- principles- Logistics Network- Integrated Logistics system. Supply chain management- Nature and Concepts- Value chain- Functions – Supply chain effectiveness- Outsourcing - 3PLs and 4PLs Supply chain relationships- Customer services.

2 Elements of Logistics and Supply chain management : Inventory carrying – Ware housing – Warehouse Layout design, the concept of honeycomb loss in goods stacking, method of assigning dedicated storages; Quantitative flow balance analysis, Material handling – Order Processing – Transportation, Demand Forecasting - Impact of Forecasts on Logistics and Supply chain management – Performance measurements.

First Internal Examination

3 Logistical Information system (LIS) - Operations – Integrated IT solution for Logistics and Supply chain management – Emerging technologies in Logistics and Supply Chain management. Components of a logistic system – transportation – inventory carrying – warehousing-order processing – Ocean transport – ships – types - measurement of capacity of ships – shipping Information.

4 Transportation & Logistics: Position of Transportation in Logistics and Supply chain management- Road, Rail, Ocean, Air, Transport Multi model transport- Containerization – CFS-ICDS – Selection of transportation mode – Transportation Network and Decision- Insurance Aspects of logistics.

Second Internal Examination

5 Material Handling: Material Planning – Introduction – Factors affecting material planning – Techniques of material planning – MRP, Inventories – Definition- Classification of Inventories- Need for inventories – Merits & Demerits of Inventories, Inventory control techniques and principles - classification, codification, standardization – ABC analysis –VED, GOLF, FSN - HML Equipments: Cranes, tower cranes, lifting equipment, series lifting equipment, lifting platforms, continuous mechanical handling equipment, monorail conveyors, belt, chain and overhead conveyors. Industrial trucks

Final Examination