NIRMA UNIVERSITY
INSTITUTE OF TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

(Open Elective)

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Course Code	**2MEOE28**
Course Title	**Logistics and Supply Chain Management**

Course Outcomes (CO):

At the end of the course, students will be able to –

1. appraise the importance of supply chain concepts and strategies,
2. justify the role of logistics and network design in supply chain,
3. distinguish demand forecasting methods used for supply chain management,
4. elaborate the role of inventory and aggregate planning in a supply chain.

Syllabus **Teaching Hours: 45**

UNIT I **Introduction of Supply Chain Management** **05 hours**

Integrated supply chain, Growth of Supply chain, Strategic decision in supply chain. Make or Buy Decision, Supplier development, Supply Chain Management, Scope, Supply Chain Management as a Management Philosophy, Function of SCM, Value chain for Supply Chain Management, Buyers and Suppliers Perspective

UNIT II **Role of Logistics in Supply Chain** **07 hours**

Introduction, Value-added roles of logistics, Logistics in the Economy and Firm, Logistics interfaces with Marketing and other areas, Factors affecting the cost and importance of logistics, Techniques of logistics System analysis, Approaches to analyzing logistics system: Materials management versus physical distribution, warehousing: locations and its importance, Cost centers, Nodes versus links and Logistics channels. Role of Information Technology in logistics

UNIT III **Supply Chain Strategies, Drivers and Metrics** **06 hours**

Cycle and Push and Pull View. Competitive and Achievement of strategic fit, Obstacles to achieving Strategic Fit, Supply Chain Drivers and Metrics Drivers of supply chain performance, Frame work for structuring drivers, Facilities, Inventory, Transportation, Information, Sourcing, Pricing

UNIT IV **Network design in supply chain** **07 hours**

Role of network design in supply chain, Factors influencing network design, Framework for network design decisions, Models for facility location and capacity location

UNIT V **Demand Forecasting** **06 hours**

Role of forecasting in a supply chain, Characteristics, Components and forecasting methods, Measures of forecasting errors, Bullwhip effect in supply chain

UNIT VI **Inventory and Aggregate Planning in a Supply Chain** **08 hours**

Appraisal for inventories, types of inventories, Classification of inventory management problems, Inventory objectives, Push and Pull inventory control, Aggregate control of inventories. Role of Aggregate Planning in a Supply Chain, Aggregate planning problems, Aggregate planning Strategies

UNIT VII **Case Studies on supply chain management** **06 hours**

Case Studies in supply chain management such as Seven-Eleven, Wall- Mart Stores Inc., Zara, Amazon, HUL, Toyata, Flipcart, MacDonald, Nike, Amul, Macmaster, etc

Self – Study

The self-study contents will be declared at the commencement of semester. Around 10% of the questions will be asked from self-study contents.

Suggested Readings:

1. Chopra, S., Meindl, P. and Kalra D.V., Supply Chain Management, Pearson
2. Ballou, R. H. and Srivastav, S.K., Business Logistics/Supply Chain Management, Pearson
3. Coyle, J. J., Langley, C. J. Jr., Novack, R. A. and Gibson, B. J., Managing Supply Chains A Logistics Approach, Cengage Learning
4. Mohanty, R. P. and Deshmukh, S. G., Essentials of Supply Chain Management, Jaico Pub. House.
5. Case Studies in Supply Chain Management - Vol. I, ebook ICMR.

L=Lecture T= Tutorial P=Practical, C=Credit

w.e.f. academic year 2020-21 and onwards

Note: Open for all except students of mechanical engineering who have opted subject "Supply Chain Management" as an elective in the Mechanical Engineering Department.