

## LOGISTICS & SUPPLY CHAIN MANAGEMENT

<b>Course Code</b>	20ME2501B	<b>Year</b>	III	<b>Semester</b>	I
<b>Course Category</b>	OE-I	<b>Offering Branch</b>	ME	<b>Course Type</b>	Theory
<b>Credits</b>	3	<b>L-T-P</b>	3-0-0	<b>Prerequisites</b>	Nil
<b>Continuous Internal Evaluation</b>	30	<b>Semester End Evaluation</b>	70	<b>Total Marks</b>	100

<b>Course Outcomes:</b> Upon successful completion of the course, the student will be able to				
CO	Statement	Skill	BTS	Units
CO1	Explain the importance of Supply Chain Management	Understand	L2	1,2,3,4,5
CO2	Illustrate Inventory control techniques	Apply	L3	2
CO3	Illustrate various issues in Supply Chain Management	Apply	L3	5
CO4	Interpret supply chain strategies and procurement strategies	Apply	L3	4
CO5	Design Supply Chain Networks suitable for various market conditions	Analyse	L4	3

<b>Contribution of Course Outcomes towards achievement of Program Outcomes &amp; Strength of correlations(3:High, 2:Moderate,1: Low)</b>														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		2							2		3			1
CO2		2							2		3			1
CO3		2							2		3			1
CO4		2							2		3			1
CO5		2							2		3			1

<b>Syllabus</b>		
UNIT	Content	Map ped CO
I	<b>Introduction to Supply Chain Management (SCM):</b> Concept of supply management and SCM, importance of supply chain flows, core competency, value chain, elements of supply chain efficiency, key issues in SCM, decision phases, supply chain integration, process view of a supply chain, competitive strategy and supply chain strategies, uncertainties in supply chain, supply chain drivers.	CO1
II	<b>Inventory Management:</b> Introduction, selective control techniques, cost involved in inventory system, single stage inventory control, economic lot size models, application to economic production quantity, effect of demand uncertainty, single period models, initial inventory, multiple order opportunities, deterministic models, quantity discounts. periodic and quantity review policies, mathematical modeling under known stock out costs and service levels, joint replenishment for multiple items, inventory system constraints, working capital restrictions, and storage space restrictions.	CO1 CO2

<b>III</b>	<b>Designing Supply Chain Network:</b> Introduction, network design, factors influencing network design, data collection, data aggregation, transportation rates, warehouse costs, capacities and locations, models and data validation, key features of a network configuration, impact of uncertainty on network design, network design in uncertain environment, value of information: Bull whip effect, information sharing, information and supply chain trade-offs, distribution strategies, direct shipment distribution strategies, transshipment and selecting appropriate strategies.	<b>CO1 CO5</b>
<b>IV</b>	<b>Supply Chain Integration:</b> Introduction, push-pull supply chains, identifying appropriate supply chain strategy, Sourcing and procurement, outsourcing benefits, importance of suppliers, evaluating a potential supplier, supply contracts, competitive bidding and negotiation. Purchasing, objectives of purchasing, relations with other departments, centralized and decentralized purchasing, purchasing procedure, types of orders, e-procurement, tender buying, role of business in supply chains.	<b>CO1 CO4</b>
<b>V</b>	<b>Issues in Supply Chain Management:</b> Introduction, risk management, managing global risk, issues in international supply chain, regional differences in logistics. Local issues in supply chain, issues in natural disaster and other calamities, issues for SMEs, organized retail in India, reverse logistics.	<b>CO1 CO3</b>

### Learning Resources

#### **Text books:**

1. Simchi-Levi, D. Kaminsky, P. Simchi-Levi, E. and Ravi Shankar, Designing and Managing the Supply Chain: Concepts, Strategies and Case Studies, 3/e, Tata McGraw-Hill, 2008.
2. Chopra, S. and Meindl, Supply Chain Management: Strategy, Planning and Operations, 2/e, Pearson Education, 2004.

#### **Reference books**

1. Doebler, D.W. and Burt, D.N, Purchasing and Supply Management-Text and Cases, 6/e, McGraw-Hill, 1996.
2. Tersine, R.J, Principles of Inventory and Materials Management, 4/e, Prentice Hall, 1994.

#### **E- Resources & other digital material**

1. <https://ocw.mit.edu/courses/engineering-systems-division/esd-273j-logistics-and-supply-chain-management-fall-2009/lecture-notes/>
2. <https://nptel.ac.in/courses/110/108/110108056/>