

LSCM 2002	Logistics & Supply Chain Management	L	T	P	C
<b>Version 1.0</b>		3	0	0	3
<b>Pre-requisites/Exposure</b>	12th level				
<b>Co-requisites</b>	Basic understanding of Business Management				

### Course Objectives

The objectives of this course are:

- Developing an understanding of the key concepts applied in Logistics and Supply Chain Management
- To highlight the importance of all activities of the supply chain and an understanding of concepts like inbound and outbound logistics, 3 PLs & 4 PLs, inventory management, bullwhip effect, offshore and inshore logistics etc.
- To develop skills for planning and designing the operational facilities of supply chain with the analytical and critical understanding.
- To understand how logistics play an important role in redefining value chain excellence of firm (Porter value chain model).
- To understand how logistics play an important role in the supply chain of a company.

### Course Outcomes

CO1. Demonstrate a clear understanding of the key concepts applied in logistics and supply chain management.

CO2. To highlight the importance of all activities of the supply chain and an understanding of concepts like inbound and outbound logistics, offshore and inshore logistics.

CO3. To develop skills for planning, designing the operational facilities of supply chain with the analytical and critical understanding

CO4. To understand how logistics play an important role in redefining value chain excellence of firm (Porter value chain model).

CO5. Demonstrate effective application capabilities of their conceptual understanding to the real world business situations.

### Catalog Description

Logistics & Supply Chain concerned with the efficient flow of materials, products, and information within and among organizations. Supply chain management involves the integration of business processes across organizations, from material sources and suppliers through manufacturing and processing to the final customer. The program provides students with the core knowledge related to a wide variety of supply chain activities, including demand planning, manufacturing planning and control, purchasing,

transportation management, warehouse management, inventory control, material handling, product and service support, information technology, and strategic supply chain management. The program takes a balanced approach to supply chain education, requiring courses in operations, logistics, and purchasing for all students.

The major builds an understanding of how logistics and transportation are managed by connecting students to business logistics in the field through interactions with executives in the classroom. Students will be skilled in identifying the critical service and cost factors when making business logistics decisions, and students will be equipped with the skills to evaluate trade-offs between the factors and to ultimately make the most cost effective and service effective logistics decisions. The field of retail logistics includes professions such as supervisors/ managers of warehouse, inventory management, transportation and procurement management. The demand for trained logistics professionals is growing nationally, resulting in huge career opportunities and is projected to add substantial numbers of new jobs in India and overseas.

The teaching methodology includes lectures using power point, case studies, articles, group discussions, role plays and presentations. Students are expected to study the topic/assigned chapters before they come to class. Interaction during lectures is encouraged and therefore each student is expected to add valuable inputs during lectures by sharing his/her knowledge, opinions gained through prescribed readings and articles. Students should be able to demonstrate their knowledge of retail logistics concepts by applying those in their written exams, case studies discussions, presentations and project works. The students would be given assignment/project, which would enable them to apply the logistics concepts practically in industry and illustrate those through a written report and presentation. The course methodology thus encourages students to explore themselves for the supervisory/managerial role in logistics and supply chain of any organization.

## **Course Content**

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### **Unit I:**

**05 Hours**

#### **Introduction to Logistics and Supply Chain Management**

Introduction to Logistics and Supply Chain Management, Understanding Logistics and its Role in the Supply Chain, Understanding the Supply Chain, Discussing examples of supply Chain, Supply chain drivers and Metrics, Framework for structuring drivers- Facilities, Inventory, Transportation, Information, Sourcing, and Pricing, Challenges in maintaining a Supply Chain in India

### **Unit II:**

**03 Hours**

#### **Developing Supply Chain Strategies**

Value Chain concept, Supply Chain Issues: Managing Predictable variability (Fisher Framework), Developing Supply Chain Strategy (Hau Lee Framework)

**Unit III: 09 Hours**

**Managing Material Flow in Supply Chain**

Inventory Management: Inventory types & functions, Reasons for carrying inventories, Inventory related costs; Inventory Management Practices: Classification; Bullwhip effect in the Supply Chain; Warehousing: Economic Benefits, Strategic benefits, Accuracy and audits, Security, Safety and maintenance; Warehouse Operations: Inbound and Outbound processes, Handling, Storage; Warehouse Ownership: Private, Public, Contract; Warehouse decisions: Site selection, Design, Product mix analysis, Expansion; Warehouse decisions: Layout & Sizing

**Unit IV: 06 Hours**

**Transportation**

Introduction; Transportation modes-Rail, road, waterways & airways; Evolution of Transportation system; Transportation infrastructure; Freight management; Containerization; Cold Supply Chain; Deciding the Network; Transportation networks; Route planning; Containerization; Transportation of Oil & Gas

**Unit V: 04 Hours**

**Demand Forecasting**

Introduction to forecasting; The role of forecasting in a supply chain; Components of a forecast & Forecasting methods; Qualitative Forecasting Methods & Quantitative Methods of forecast; Numerical on Demand Forecasting; Postponement Strategy: Concept of Postponement, Examples for postponement

**Unit VI: 04 Hours**

**Excel Modeling**

Introduction to Modelling and Design; Network Optimization Problem: The capacitated Plant Location Model, Network Optimization Problem, Gravity Location Model, Travelling Sales Man Problem; Case study on optimization problem

**Unit VII: 05 Hours**

**Information Technology in Supply Chain management**

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Role of IT in a supply chain; The supply chain IT framework: CRM, ISCM, SRM, TMF; Future of IT in SCM; Supply chain IT in practice; SCM & ERP; Enabling Supply Chain Management through IT; Supply Chain Integration/Virtual; Technology in Supply Chain

**Text Book**

- a) Supply Chain Management: Text and cases; Shah, J. (2009), Pearson, New Delhi.
- b) Supply Chain management- Strategy, Planning & Operation-6th edition; Chopra, Meindl & Kalra, Pearson Education
- c) Logistics Management-The Supply Chain Imperative Sople V. Vinod, Pearson Education

**Reference Books**

- a) Modeling the Supply Chain-2nd edition; Shapiro, Jeremy F, Duxbury Applied Series
- b) Logistics and Supply Chain Management; Christopher, M (1992), Pitman Publishing, London.
- c) Logistics and Supply Chain Management Cases and Concepts; Raghuram and Rangaraj, Macmillan
- d) Supply Chain Management; N. Chandrasekaran, Oxford
- e) Supply Chain Logistics Management-2nd Edition; Bowersox, Closs, Cooper, McGraw Hill
- f) Supply Chain Management; Dubey, Kumar Sai, New Century

**Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination Examination Scheme:**

<b>Components</b>	<b>MSE</b>	<b>IA</b>	<b>ESE</b>
<b>Weightage (%)</b>	<b>20</b>	<b>30</b>	<b>50</b>
		<ul style="list-style-type: none"> <li>• Case Presentation (35 Marks)</li> <li>• Online Assignments (30 Marks)</li> <li>• Quiz (35 Marks)</li> </ul>	

**Relationship between the Course Outcomes (COs) and Program Outcomes (POs)**

<b>Mapping between COs and POs</b>		
	<b>Course Outcomes (COs)</b>	<b>Mapped Programme Outcomes</b>

<b>CO1</b>	Understand the basic concepts of Purchasing & Supplier Relationship Management.	<b>PO 1, 2, 4, 8,9,12</b>
<b>CO2</b>	To understand the purchasing integration for competitive advantage	<b>PO 2,3,4,8,7,8</b>
<b>CO3</b>	Learn the basics of strategic sourcing & it's the issues, challenges & strategies in developing a World Class Supply Base: Supplier Evaluation and Development	<b>PO 3,4,6,8, 9, 12</b>
<b>CO4</b>	Understand basics of strategic sourcing process & its application	<b>PO 4,5,6,7,9,10,11</b>

**Program Outcome / Course Outcome mapping**

<b>Course Outcomes</b>	<b>CO 1</b>	<b>CO 2</b>	<b>CO 3</b>	<b>CO 4</b>
<b>PO 1</b>	3	3	3	2
<b>PO 2</b>	3	3	3	2
<b>PO 3</b>	3	3	3	2
<b>PO 4</b>	3	1	1	3
<b>PO 5</b>	2	2	1	3
<b>PO 6</b>	2	2	2	2
<b>PO 7</b>	3	3	1	2
<b>PO 8</b>	3	3	3	3
<b>PSO 9</b>	3	3	3	1
<b>PSO 10</b>	3	3	3	2
<b>PSO 11</b>	3	3	3	2
<b>PSO 12</b>	1	1	1	3

		Students will demonstrate strong conceptual knowledge of management & its functional areas.	Students will demonstrate effective oral and written communication skills in the professional context.	Students will be able to work effectively in teams and demonstrate team-building capabilities.	Students will be able to evaluate the legal, social and economic environments of business.	Students will be able to describe the global environment of business.	Students will demonstrate sensitivity towards ethical and moral issues and have ability to address them in the course of business.	Students will be able to apply decision-support tools to business decision making.	Students will be able to apply knowledge of business concepts and functions in an integrated manner.	Students will demonstrate conceptual domain knowledge of the logistics sector.	Students will apply decision-support tools to decision making in logistics sector.	Students will apply conceptual knowledge of logistics sector in an integrated manner.	Students will demonstrate employable and deployable skills for appropriate roles in management.
LSC M 300 9	Supplier Relationship Management	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PSO 9	PSO 10	PSO 11	PSO1 2
		3	3	3	2	2	2	2	3	2	3	3	2

**1 – Weakly mapped**

**2 – Moderately mapped**

**3 – Strongly mapped**

## **Model Question Paper**

**University of Petroleum & Energy Studies**

**College of Management & Economics Studies**

Kandoli Campus, Dehradun

**End Semester Examination**

**Programme Name: BBA (LM)**

**Semester - III**

**Subject: Logistics & Supply Chain Management**

**M. Marks: 100**

**Subject code: LSCM 2002**

**Duration: 3 Hrs**

<b>Note: All sections are compulsory &amp; this question paper carries 4 sections.</b>		
<b>Section – A (20 Marks) Attempt all questions in this section</b>		
1. (A) Write the full form of the following		<b>(2*5=10 marks)</b>
(i) JIT	<b>(2)</b>	<b>CO1, CO5</b>
(ii) MMT	<b>(2)</b>	
(iii) VMI	<b>(2)</b>	
(iv) EDI	<b>(2)</b>	
(v) CPFR	<b>(2)</b>	
(B) Short Notes type question		<b>(2*5=10 marks)</b>
1. Consolidation	<b>(2)</b>	<b>CO1, CO4</b>
2. LTL vs FTL	<b>(2)</b>	
3. 3 PL service provider	<b>(2)</b>	
4. Value Chain	<b>(2)</b>	
5. Cycle view of Supply chain	<b>(2)</b>	
<b>Section – B (20 Marks)</b>		
<b>Attempt any 4 question, each question carries 5 marks only</b>		<b>(5*4=20 marks)</b>
1. Discuss any two methods of demand forecasting and their applications.	<b>(5*4= 20 marks)</b>	<b>CO1, CO3, CO4</b>
2. How IT is playing an important role in the supply chain?		
3. Explain the need of a warehouse in the supply chain		
4. Explain Push vs Pull supply chain.		
5. Explain the concept of Bullwhip effect in the supply chain		

<b><u>Section – C (30 Marks)</u></b>		
<b>Long answers Question, each question carries 15 marks</b>	<b>(15*2=30 marks)</b>	
<p><b>Q.1.</b> Why transportation is considered so important to the Indian economy and why is it so important for an individual firm? What factors would you consider to choose the appropriate mode of transport for an industrial item?</p> <p><b>Q.2.</b> Discuss the various supply chain issues and challenges faced by Oil and Gas Industry and what measures may be taken to overcome the issues?</p>	<b>(15*2= 30 marks)</b>	<b>CO1, CO2, CO3, CO4</b>
<b><u>Section – D (30 Marks)</u></b>		
<p>ABC Ltd. is the country’s largest manufacturer of lube products with well-established market. ABC Ltd. has good reputation for quality and service. Their marketing department identified that the potential for global market is expanding rapidly and hence the company undertook exercise for expansion of the capacity for export market. The company formed team of Marketing and Materials department to study the global logistics possibilities. After extensive study, the team came up with a report on global logistics and submitted that global logistics is essentially same as domestic due to following similarities:</p> <ul style="list-style-type: none"> <li>• The conceptual logistics framework of linking supply sources, plants, warehouses and customers is the same.</li> <li>• Both systems involve managing the movement and storage of products.</li> <li>• Information is critical to effective provision of customer service, management of inventory, vendor product and cost control.</li> <li>• The functional processes of inventory management, warehousing, order processing, carrier selection, procurement, and vendor payment are required for both.</li> <li>• Economic and safety regulations exist for transportation.</li> </ul> <p>The company had very economical and reliable transportation system in existence. For exports as well they decided to evaluate capabilities of their existing transporter and entrusted them with the job of transport till port. For customs formalities they engaged a good CHA after proper cost evaluation and entered into contract for freight with shipping company agent.</p>		



<p>The response for company's export was very good and the company could get as many as 15 customers within first two months and reached to a level of USD 250,000 per month by the end of first half of the year. Based on this response the export volumes were expected to grow to a level of USD 400,000 per month by the end of the year. When the review was made at the end of the year, company found that export volumes had in fact come down to the level of USD 120,000 which was much lower than it had reached in the first half of the year.</p> <p>The managing committee had an emergency meeting to discuss this and the export manager was entrusted with the task of identifying the reasons for this decline. Mr. Suhansh decided to visit the customers for getting the first hand information. When he discussed the matter with the customers, the feedback on the quality and price were good but the customers were very upset on the logistic services due to delayed shipments, frequent changes in shipping schedules, improper documentation, improper identifications, package sizes, losses due to transit damages etc.</p> <p>After coming back, the export manager checked the dispatch schedules and found that production and ex-works schedules were all proper. Then he studied the logistics systems of lubricants and found that the logistics cost was very high and all the logistics people were de- motivated due to overwork and were complaining of total lack of co-ordination and the system had become totally disorganized.</p>	
<p>1. Explain the problems experienced by ABC Ltd. in smooth functioning of their supply chain of lube products. What are the main causes of these problems?</p> <p>2. What logistics model should the company go for to ensure proper operations/supply chain of the company? Explain with the help of Diagram.</p>	<p><b>CO1, CO3, CO5</b></p>

