Course code	Course Name	L-T-P	Credits	Year of Introduction
IE306	SUPPLY CHAIN AND LOGISTICS MANAGEMENT	3-0-0	3	2016

Prerequisite: Nil

Course Objectives

- To develop knowledge on structures, decision phases, measures and tools of supply chains.
- To develop understanding on the strategic, tactical and operational decision tools of supply chains.
- To impart knowledge on logistics management and related advanced tools and techniques.

Syllabus

General features of supply chains, planning demand and supply, forecasting, aggregate planning, network design, locations, layouts etc. Supply chain inventory planning decisions, multi-echelon cycle and safety inventory systems: Logistics management: design of transportation network. Routing, scheduling and sequencing. Advanced logistics decision models.

Expected Outcome

The students will

i. Understand the structures, decision phases, measures and tools of supply chains.
ii. Understand the strategic, tactical and operational decision tools of supply chains.
iii. Understand knowledge on logistics management and related advanced tools and techniques.

Text Books

1. G. Sreenivasan, Quantitative Models in Operations and Supply Chain Management, PHI
2. Sunil Chopra, Peter Meindl, Supply Chain Management – Strategy, Planning and Operation, Pearson Education.

References

1. David Simchi – Levi & Philip Kaminsk, Designing and Managing the Supply Chain, McGraw-Hill Companies Inc.
2. David Taylor and David Brunt, Manufacturing Operations and Supply Chain Management, Vikas Thomson Learning, 2001.
3. Donald J. Bowersox & David J. Closs, Logistical Management, TMH.
4. Jeremy F. Shapiro, Modeling and Supply Chain,. Thomson Learning, 2001.
5. Martin Christopher, Logistics and supply chain management, Financial times management.

COURSE PLAN

Module	Contents	Hours	End-Sem. Exam. Marks
I	**General Features of Supply Chains:** Supply Chains – Structures, Decision Phases, Performance Drivers and Measures, Metrics. Achieving Strategic Fit and its Obstacles.	7	15%

II	**Planning Demand & Supply:** Planning demand and supply in supply chains – Forecasting techniques for supply chains, Seasonal Forecasting Models, Measure of Forecast errors.	**7**	**15%**
FIRST INTERNAL EXAM			
III	**Aggregate Planning:** Aggregate Planning Strategies, Aggregate Planning models - Quantitative Examples. **Network Design, Locations and Layouts:** Network design in Uncertain Environment, Facility Location and Layout decisions.	**7**	**15%**
IV	**Multi-echelon Inventory Systems:** Inventory Planning Decisions –Estimate of Cycle Inventory, Discounting Models, Multi-item Inventory models, Determination of Safety Inventory, Impact of Supply Uncertainty, Multi- echelon Inventory models, Quantitative Examples. Bullwhip effect.	**7**	**15%**
SECOND INTERNAL			
V	**Logistics Management**: 3PL, 4PL, Design Options for Transportation Network. Routing, Scheduling and Sequencing in Transportation, Vehicle Routing Problems. Quantitative Examples.	**7**	**20%**
VI	**Reverse Logistics:** Reverse logistics and Closed Loop Supply Chains. **Advanced Logistics Decision Models:** Bin Packing Problems, Fixed Charge Problems, Knapsack Problems, Multi-stage transportation problems.	**7**	**20%**
END SEMESTER EXAM			

End Semester Examination Question Paper Pattern

Examination duration: 3 hours Maximum Marks: 100

Part A (Modules I and II):
Candidates have to answer any 2 questions from a choice of 3 questions. Each full question carries a total of 15 marks and can have a maximum of 4 sub questions (a, b, c, d). No two questions shall be exclusively from a single module. All three questions shall preferably have components from both modules. Marks for each question/sub question shall be clearly specified. Total percentage of marks for the two modules put together as specified in the curriculum shall be adhered to for all combinations of any two questions.

Part B (Modules III and IV):
(Same as for part A marks)

Part C (Modules V and VI):
(Same as for part A, except that each full question carries 20 marks)

Note: If use of tables and charts are permitted for the university examination for this course, proper direction of the same should be provided on the facing sheet of the question paper.