

Department of Humanities

Name of the Course: Strategic Supply Chain Management (Core Course, 3 credits)

Course Code : HM 811

Instructor : Dr.V.Ravi

Course Objective:

1. Exploring key management tasks important in operating an effective and efficient supply chain system.
2. Applying the knowledge of supply chain and its strategic role in corporate performance.
3. Optimize supply chain efficiency and apply value oriented management techniques in supply chain management.

Outcome:

After successful completion of the course, students should be able to do the following:

1. Understand basic concepts, models and theories within supply chain management
2. Develop and implement supply chain management strategies and their links to the overall strategy and business idea of the company
3. Demonstrate the ability to give recommendations on improvement of supply chain performance.

Content:

Unit 1: Introduction to supply chain management, competitive cost analysis, capacity sizing, strategic games and capacity sizing.

Unit 2: Capacity timing, capacity expansion, capacity types, operational hedging, complementary capacity – operational hedging .

Unit 3: Sales and operations planning, product design to hedge demand risk, financial hedging, capacity location and logistical design.

Unit 4: Third Party Logistics, coordination and incentives, coordination of channels of distribution, collaborative planning and forecasting, outsourcing models.

Unit 5: Product life cycle and supply chain design, supplier management, sustainability issues in supply chain, eco-efficiency, green supply chain, and reverse logistics.

Textbooks and References

1. Jan A Van Mieghem (2012). Operations Strategy: Principles and Practice, Dynamic Ideas, Charlestown, MA, 2008.
2. Ravi Anupindi, Sunil Chopra, Sudhakar Deshmukh, Jan A. Van Mieghem, and Eitan Zemel (2012). Managing Business Process Flows: Principles of Operations Management, Prentice Hall, Pearson Education.
3. Sunil Chopra and Peter Meindl (2012). Supply Chain Management. Pearson Education, Inc., Upper Saddle River, NJ.
4. David Simchi-Levi, Philip Kaminsky, Edith Simchi-Levi, and Ravi Shankar (2010). Designing and managing the supply chain. Tata McGraw Hill.
5. Sridhar Tayur and Ram Ganeshan and Micheal Magazine (1999). Quantitative models for supply chain management. Springer Verlag.

Evaluation

1. Quiz 1 : 15 Marks
2. Quiz 2 : 15 Marks
3. End Sem : 50 Marks
4. Presentation on specific topics, projects, etc : 10 marks
5. Written tests : 10 marks

Name of the Course: Supply Chain Management (Core Course, 3 credits)

Course Code : HM 812

Instructor : Dr.V.Ravi

Course Objective:

1. To introduce process and functions of supply chain management
2. Appreciate the design and network in supply chain management
3. To understand the role of coordination in supply chain management

Outcome:

After successful completion of the course, students should be able to do the following:

1. Able to define the principles of scheduling and planning in supply chain management.
2. Analyze the manufacturing operations of a firm.
3. Apply logistics and supply chain concepts to improve supply chain operations.

Content:

UNIT I

Introduction to Supply Chain Management- Supply chain – objectives – importance – decision phases – process view – competitive and supply chain strategies – achieving strategic fit – supply chain drivers – obstacles – framework – facilities – inventory – transportation – information – sourcing – pricing.

UNIT II

Designing the Supply Chain Network- Designing the distribution network – role of distribution – factors influencing distribution – design options – e-business and its impact – distribution networks in practice – network design in the supply chain – role of network – factors affecting the network design decisions – modeling for supply chain.

UNIT III

Planning Demand and Supply- Role of forecasting – demand forecasting – approaches – role of IT. Planning and Managing Inventories- Safety inventory and its appropriate level – impact of supply uncertainty, aggregation and replenishment policies.

UNIT IV

Transportation Networks and Sourcing- Role of transportation – modes and their performance – transportation infrastructure and policies - design options and their trade-offs – Tailored transportation. Sourcing – In-house or Outsource – 3rd and 4th PLs – supplier scoring and assessment.

UNIT V

Coordination in a Supply Chain- Lack of supply chain coordination and the Bullwhip effect – obstacle to coordination – managerial levels – building partnerships and trust – continuous replenishment and vendor-managed inventories – collaborative planning, forecasting and replenishment.

UNIT VI

MCDM Techniques- Introduction to techniques as AHP, ANP, TOPSIS, DEMATEL, goal programming, etc.

Textbooks and References

1. Chopra, S., and Meindl, P., Supply Chain Management – Strategy, Planning and Operation, *Prentice Hall of India Pvt Ltd, 4th Edition, 2010.*
2. Wisner, Joel D., Keah-Choon Tan, and G. Keong Leong. *Principles of supply chain management: A balanced approach.* Cengage Learning, 2014.
3. Simchi-Levi, D., Kaminsky, P., Simchi-Levi, E. and Shankar, R., 2008. *Designing and managing the supply chain: concepts, strategies and case studies.* Tata McGraw-Hill Education.
4. Ballou, R.H., 2007. *Business logistics/supply chain management: planning, organizing, and controlling the supply chain.* Pearson Education India.

5. Shapiro, J., 2006. *Modeling the supply chain*. Nelson Education.
6. Mohanty, P.D. and Deshmukh, P.D., 2005. *Supply Chain Management (Theories & Practices)*. John Wiley & Sons.

Evaluation

1. Quiz 1 : 15 Marks
2. Quiz 2 : 15 Marks
3. End Semester : 50 Marks
4. Presentation on specific topics, projects, etc : 10 marks
5. Written tests : 10 marks

Name of the Course : Materials Management (Core Course,3 credits)

Course Code : HM 813

Instructor : Dr. V Ravi

Course objectives:

1. To introduce the fundamental concepts in Materials and Logistics Management.
2. To familiarize with the issues in core functions in materials management

Course outcomes

After successful completion of the course, students should be able to do the following:

1. Manage the activities of materials manager like purchasing, inventory analysis, storage etc.in a scientific manner.
2. To analyze the inventory situation of a company and suggest improvements.
3. To practice material planning through modern materials management tools.
4. To lead the teams for effective decision making and coordinate to effect purchase at minimum cost.

Content

UNIT- I.

Introduction: Materials Management - Evolution, Importance, Scope and Objectives – Interface with other functions. Forecasting, Capacity Management.

UNIT- II

Inventory - Need of Inventory - Costs associated with Inventory - Types of Inventory – Basic EOQ Model - EOQ with discounts - ABC Analysis - (Numericals expected on Basic EOQ, EOQ with discounts & ABC).

UNIT –III

Material Requirement Planning – Concept of MRP, MRP II, MPS, BOM ERP.

UNIT-IV

Purchasing Management - Responsibilities of Purchase Department - Purchase Cycle – Negotiation & Bargaining – Vendor relations - Purchasing Methods - Global sourcing.

UNIT-V

Stores – Functions, Importance, Organization of stores & Stores layout. Stores procedure – documentation.

UNIT-VI

Materials Handling - Principles of Materials Handling system - Materials Handling Equipments – Safety issues.

UNIT- VII

Operations research techniques – Linear programming, concept of duality, assignment problems, integer programming, non-linear programming.

Text Books and References

1. Arnold, J.T., 2004. *Introduction to materials management*. Pearson Education India.
2. Lysons, K. and Farrington, B., 2006. *Purchasing and supply chain management*. Pearson Education.
3. Gopalakrishnan, P., 2004. *Handbook Of Materials Management*. Eastern economy edition.
4. Jhamb, L.C., 2003. *Materials and Logistics Management*. EPH.
5. Van Weele, A.J., 2010. *Purchasing & supply chain management: analysis, strategy, planning and practice*. Cengage Learning EMEA.
6. Taha, H.A., 2004. *Operations research: An introduction*. Pearson Education India.

Evaluation

1. Quiz 1 : 15 Marks
2. Quiz 2 : 15 Marks
3. End Semester : 50 Marks
4. Presentation on specific topics, projects, etc : 10 marks
5. Written tests : 10 marks