IV. PRODUCTION AND OPERATIONS MANAGEMENT

1. SUPPLY CHAIN MANAGEMENT
2. PURCHASING AND MATERIALS MANAGEMENT
3. QUALITY MANAGEMENT
4. PRODUCTION PLANNING AND CONTROL
5. APPLIED OPERATIONS RESEARCH
6. LOGISTICS MANAGEMENT
7. GOAL PROGRAMMING IN MANAGEMENT
8. TRANSPORTATION MANAGEMENT
9. SERVICE OPERATIONS MANAGEMENT
10. WORLD CLASS MANUFACTURING
1 SUPPLY CHAIN MANAGEMENT

Objective:
This course is intended as an elective for students wishing to take up a career in Logistics and Supply Chain Management. The objective is to present a comprehensive and integrated model of SCM with its tools and Techniques.

Course Content

Module I

Module II
Purchasing and Supplier Management, Sourcing and supplies management, outsourcing, Global Sourcing, Vender identification, selection, evaluation, development, Supplier Relationship Management, Supplier Quality Management

Module III
Distribution and planning Strategy, Warehousing and Operations Management –Transport Management, Inventory Management,

Module IV
Customer Service Management, CRM, Manufacturing Logistics, Pricing Strategies, Negotiation, SCM relationships and third part and Fourth party Logistics, SCM Network design and Facilities development,

Module V
Supply Chain Coordination, Role of IT, Impact of Internet and E-Commerce, IT enabled SCM, SCM information systems, BPR, ERP, SCM models and optimization

Suggested Readings:
1. Logistics and Supply Chain Management – Martin Christopher
2. Supply Chain Management – Sunil Chopra and Peter Meindal
3. Integrated Logistics Management – Donald J. Bowersox and David J. Closs
2. PURCHASING AND MATERIALS MANAGEMENT

Objectives:
The key objective of this course is to acquaint the students with Decision-making for effective and efficient purchase, storage and flow of materials in manufacturing and service organisations. Cost-reduction techniques in Pre-Purchase, Purchase and Post-Purchase systems, Modern material planning and delivery systems like MRP and JIT and material handling and logistics systems.

Module I: Role, Scope and Importance of the Function & Purchase and Materials Management
Objectives of Materials Management, the materials cycle, organisation for Materials Management, Transportation Management, Ware housing, Organisation & Control for logistic Management, Material handling. Logistics.

Module II: Classification of Materials and Estimation of Demand

Module III: Procurement
Purchasing policies and practices, make/buy/lease decisions, location and selection of suppliers, buying the right material at the optimum price. Vendor rating and source development. Imports, procurement in shortage situation, hedging ethical and legal aspects of purchasing lead time analysis, paper work and record of purchasing department, cost of acquisition. Capital Equipment purchase

Module IV: Inventory Control
System of stock replenishment, cost of inventory holding and of stock out, Inventory control principles, Basic EOQ formula. Adaptation of discount and other price factors, other considerations in determining order quantities, service levels and safety stock, considerations for dependent demand items, order quantities in fixed interval replenishment systems.

Module V: Materials Requirement Planning
Layout of stores and warehouses, storage facilities, Material handling in stores, physical control of stock, preservation of stores, accounting and other record of stores. Appreciation of use of computer for maintenance of records and for generating outputs for decision making. Material Handling, Traffic and Transportation, Disposal of Scrap, Surplus and Obsolete Materials. JIT Purchasing.

Suggested Readings:

3. QUALITY MANAGEMENT
Objectives:
1. To expose the multi-disciplinary students joining MBA to the Principles of Quality Management.
2. To equip the students with an understanding for statistical Quality control.
3. To develop in the students an understanding of Benchmarking, Total Quality Management and ISO - 9000 and other modern quality management methods and systems.

Module I : Policy and Organization of Quality
Quality concept and objectives, quality organization and Programmes, Quality circles, training for quality, quality related budgets and costs, value engineering.

Module II : Quality in Engineering Design and Manufacture
Design objectives, National and international engineering design standards, statutory provisions and obligations. Quality control in design, Control of Engineering changes and design modifications. Product Reliability. Taguchi’s loss function, FMEA, TPM, Zerodefects and Six sigma.

Module III : Quality Functions in Manufacturing and Statistical Quality Control

Module IV Total Quality Management
Strategic Quality Planning, Introduction to TQM, Organizing for TQM, Benefits of TQM, , Kaizen, Benchmarking, Organizing for TQM Quality Circles, Kaizen, Benchmarking for quality improvement, TQM in service organisations, Training for TQM. Implementing a TQM program. TPM.

ISO - 9000, Baldrige Award, Balanced Score card, ISO - 9000 Vs the Baldrige Award. ISO 14000, Management systems for Health and Safety. Auditing and certification process. Six Sigma Initiatives.

Suggested Readings:
4: PRODUCTION PLANNING AND CONTROL

Objectives
The develop a broad conceptual framework based on the research which has been done in the recent past and to bridge the gap between the theoretical solutions on one hand and the real world problems on the other in production planning and control.

Course Contents
Production Planning and Control Function; material Requirement Planning; Production-Inventory Systems; Forecasting for Inventory and Production Control; Aggregate Planning; Job Shop Planning; Scheduling and control; Just-in-Time Production; Line Balancing; Planning for High Volume Standardized products; Procedures and Documentation in Production Planning and Control; Application of Computers ERP.

Suggested Readings

2. Caubang, ted C. Readings on Production Planning and Control, Geneva ILO
4. Mc Leavye, Dennis W and Narasimhan, S L Production and Inventory Control Boston, Allyn and Bacon1985

The list of cases and specific references including recent articles will be announced in the class at the time of launching of course.
5  APPLIED OPERATIONS RESEARCH

Objectives
The Course is designed to introduce the students to the principles of operations research techniques and their applications in decision making. Students will also be required to use computer packages for data processing purposes.

Course Contents
Parametric and Sensitivity Analysis; Inventory Control Models Under Uncertainty; Applied Queuing Models; Networks Models; Non-linear optimization techniques-Quadratic Programming; Portfolio management Problem; Replacement Models and policies; dynamic programming; Reliability Models.

Suggested Reading

3. Gupta M P and Sharma J K Operations research for management, New Delhi, national, 19976

The list of cases and specific references including recent articles will be announced in the class at the time of launching of the course.
6 LOGISTICS MANAGEMENT

Objectives
The Course is designed to explain basic theory and techniques of logistics to examine the issues and problems associated with logistics in a changing business environment, and to show how logistics can improve an enterprises effectiveness and competitiveness. Students would be encouraged to use computer software packages for problem solving.

Course Contents
Introduction to logistics and its interface with Production and marketing; Measures of Logistics; physical Distribution and Logistics; Logistics System Analysis and design; Warehousing and Distributing Centers; location; Transportation Systems; facilities and Services; Dispatch and Routing decisions and Models Inventory Management Decisions; Logistics Audit and Control; Packaging and Materials Handling; International Logistics management; Logistics Future Directions.

Suggested Readings

7 GOAL PROGRAMMING IN MANAGEMENT

Objectives
The objective of this course is to acquaint the students with the concepts, solution methods and applications of goal programming to real-world problems.

Course Contents
Goal Programming – Basic Concept Model Formulation, Graphical and Simplex method; Integer Goal programming, Post-Optimal Sensitivity Analysis; Parametric Goal Programming; Goal Programming under Uncertainty; Application of Goal programming in Functional Areas of Management; Implementation of Goal Programming Introduction to some Application software such as – QSB Micro Manager and LIGO.

Suggested Readings

4. Ijier Y Management Goals and Accounting for Control Amsterdam, North Holland, 1965
5. Lee S M Goal programming for Decision Analysis, Philadelphia, Auerbach, 1971

The list of cases and specific references including recent articles will be announced in the class at the time of launching of the course.
8 TRANSPORTATION MANAGEMENT

Objectives
The objective of the course is to acquaint the students with the problems faced in planning policy and executing the transportation system.

Course Contents
Growth of Urbanisation and problems of Transportation; Transport-Challenges and Limitations; Government Activities in Transportation; Transportation systems – Planning, Operation and Management; Trip Generation and Distribution; Load Planning; Transportation Modes and their Selection; Sequential Travel Demand Forecasting Models; Future developments in Transportation, Motor Vehicle Act 1988 and its impact on Urban Transport system; Emission Norms.

Suggested Readings

2. Bell G. etc. The business of Transport, Plymouth, McDonald and Evans.1984
5. Gupta M.P> Metropolitan Transportation System New Delhi, national, 1983

The list of cases and specific references including recent articles and reports will be announced in the class at the time of launching of the course.
9. SERVICE OPERATIONS MANAGEMENT

Objectives
The key objective of this course is to acquaint the students with decision making in planning, design, delivery, quality and scheduling of service operations. The candidates are also expected to appreciate the role of service quality and operations in emerging services economy of India.

Course Contents
Matrix soft Service characteristics; Challenges in Operations management of Services Aggregate Capacity Planning for Services; Facility Location and layout for Services; Job Design – Safety and Physical environment; Effect of Automation; Operations Standards and Work measurement; Measurement and Control of Quality of Services; Dynamics of Services Delivery System; Scheduling for Services personnel and Vehicles; Waiting – line analysis; Distribution of Services; Product-Support Services; Maintenance of Services; Inventory Control for Services; case Studies on Professional Services.

Suggested Readings


The list of cases and specific references including recent articles will be announced in the class at the time of launching of course.
10. WORLD CLASS MANUFACTURING

Objective
To acquaint the students with the world class manufacturing environment and optimized production principles.

Course Contents

Suggested Readings


The list of cases and specific references including recent articles will be announced in the class at the time of launching of course.