Basics of Supply Chain Management

This is an introductory course for production and inventory management personnel and CPIM candidates. This course provides basic definitions and concepts for planning and controlling the flow of materials into, through, and out of an organization. It explains fundamental relationships among the activities that occur in the supply chain from suppliers to customers. In addition, the course addresses types of manufacturing systems, forecasting, master planning, material requirements planning, capacity management, production activity control, purchasing, inventory management, distribution, quality management, and Just-in-Time manufacturing.

I. Business-wide Concepts
   This section of the outline covers basic business-wide concepts, including the various production environments used for the transformation process and financial fundamentals. Also in this section, three of the more common company-wide management approaches (MRP II, JIT, and TQM) are presented together with their interrelationships.

   A. Elements of the Supply Chain
      1. Supplier
      2. Producer
      3. Distributor
      4. Retailer
      5. Customer
      6. Service and support

   B. Operating Environments
      1. Definition and impact
      2. Process choices
      3. Impact of product design
      4. Production environment

   C. Financial Fundamentals
      1. Statements
      2. Costs
      3. Analysis

   D. Manufacturing Resource Planning (MRP II)
      1. Objectives
      2. Key principles and characteristics

   E. Just-in-Time (JIT)
1. Objectives
2. Key principles and characteristics
3. Concepts of waste and value-added activity

F. Total Quality Management (TQM)

1. Objectives
2. Key principles and characteristics
   A. Relationships among MRP II, JIT, and TQM

II. Demand Planning
This section covers demand planning, including a basic understanding of markets and customer expectations, the definition of value, and a fundamental overview of demand forecasting.

A. Marketplace-Driven

1. Customers
2. Competitors
3. Economy and regulatory policy

B. Customer Expectations and Definition of Value

1. Order winners/qualifiers
2. Marketing strategy

C. Customer Relationships

1. Expanding product/service offerings
2. Design assistance
3. Information/communications

D. Demand Management

1. Sources of demand
2. Forecast management
3. Distribution requirements planning (DRP)

III. Transformation of Demand into Supply
This section includes design, management, and control of the transformation process itself. The first part of this section includes the design of products, processes, and information systems used for planning. The rest of the section includes fundamentals of planning systems, execution controls, and performance measures.

A. Design

1. Manufacturing feasibility
2. Planning parameters
3. Data
4. Functional responsibilities

B. Capacity Management

1. Resources
2. Measuring capacity
3. Capacity planning
4. Bottlenecks/constraints

C. Planning

1. Business planning
2. Sales and operations planning/production planning
3. Master scheduling and rough-cut capacity planning
4. Material requirements planning (MRP) and capacity requirements planning (CRP)

D. Execution and Control

1. Customer service
2. Linkages to the master schedule
3. Scheduling techniques
4. Work-in-process
5. Quality assurance

E. Performance Measurements

1. Strategic
2. Tactical

IV. Supply
This section is devoted to supply issues. These include the concepts of inventory, purchasing, and physical distribution.

A. Inventory

1. Categories
2. Functions
3. Dependent vs. independent demand systems
4. Management
5. Order systems
6. Cost analysis

B. Purchasing
1. Receiving and analyzing notification of need
2. Selecting suppliers
3. Supplier agreements
4. Order management

C. Physical Distribution System

1. Transportation
2. Warehousing
3. Distribution inventory
4. Interfaces with production, marketing, and finance