

## Operations Management

### Course Objectives

This subject aims to impart to the students: Ability to analyze the manufacturing operations of a firm

Learn to understand and apply sales and operations planning, MRP and lean manufacturing concepts

Deeper understanding on quality management tools for process improvement

### Syllabus

Scope of Operations Management, Evolution of OM, productivity Management, Forecasting - features of good forecast - classification of forecasting techniques, inventory management, Capacity Planning, Design capacity and Effective capacity, Location Planning, World Class Manufacturing Concepts, MRP, MRP II, quality concepts. Expected Outcome

After the successful completion of the course the students will have the ability to analyze manufacturing operations of a firm, understand and apply sales and operations planning, understand supply chain operations and the basic understanding on process improvement techniques. References

1. Adam, Everette E and Ronald J Ebert. Production and Operations Management: Concepts, Models, and Behavior. PHI, 2010.
2. Aswathappa, K and Sridhara Bhat. Production and Operations Management. Himalaya Publishing House, 2010.
3. Bozarth, Cecil. Introduction to Operations and Supply Chain Management (3/e). Pearson, 2011.
4. Chase, Richard B. Operations Management for Competitive Advantage. Tata McGraw Hill, 2004.
5. Chunawala, S A. Basics of Production and Operations Management. Himalaya Publishing House, 2001.
6. Finch, Byron J. Operations Now: Supply Chain Profitability and Performance. McGraw Hill, 2007.
7. Gaither, Norman G and Greg Frazier. Operations Management. Cengage Learning, 2002.
8. Garg, Ajay K. Production and Operations Management. Tata McGraw Hill, 2012.
9. Hill, Terry. Operations Management. Palgrave Macmillan, 2006.
10. Kachru, Upendra. Production and Operations Management. Excel Books, 2007.
11. Mahadevan, B. Operations Management: Theory and Practice. Pearson Education India, 2010.
12. Russell, Robert S and Bernard W Taylor. Operations Management: Along the Supply Chain (6/e). Wiley India, 2009.

## Course Plan

I Introduction to Operations Management: Production-systems concept, transformation process, difference between products and services, 5P's and 9M's of OM, Operations as service. Evolution of OM - Craft, Mass and Lean Production. Operations strategy: Operations strategy in manufacturing, Operations strategy in services Process Analysis: Process Flowcharting, Types of process, process performance metrics

II Employee productivity: Productivity and the organization, variables affecting labour productivity, Capacity- capacity utilization Work study- Method study-work measurement techniques Quality: Total Quality Management Defined Malcolm Baldrige National Quality Award, Quality Specifications, Costs of Quality, Continuous Improvement, SPC Tools, Benchmarking, Fail-safing ISO 9000, six sigma- Mumbai Dabbawallas

### First Internal Examination

III Materials management-Stores management, maintenance management, Inventory management, types of inventory, classification - ABC analysis, VED analysis, FSN analysis, HML analysis, Inventory costs, inventory models - EOQ, safety stocks, Re-order point, Problems in Basic EOQ model.

IV Managerial use of Break-even analysis and make or buy Decisions Facility planning and plant layout, cellular manufacturing Supply Chain strategy: Elements of supply chain - Measuring supply chain performance, bull whip effect, outsourcing, mass customisation 6 15

### Second Internal Examination

V Master Production Scheduling (MPS), Materials Requirement Planning (MRP), Manufacturing Resource Planning (MRP II), Rough Cut Capacity Planning (RCCP), ERP. Contributions of Japanese Manufacturing - Kanban, Kaizen, Poka Yoke, JIT, 5S - TPS - Lean Manufacturing

V World Class Manufacturing: Principles of WCM- Computer Integrated Manufacturing, Flexible Manufacturing Systems, Group Technology and Cellular Manufacturing, Quick Response manufacturing, concurrent engineering

### Trimester Examination