

22BA XXX: OPERATIONS MANAGEMENT (4L + 1T + 1P)

Subject Code :	22BA XXX	I A Marks	30
No. of Lecture Hours / Week	05	End Exam Marks	70
Total Number of Lecture Hours	75	Total Marks	100
Practical Component	01 Hour/Week	Exam Hours	03

Course Outcomes: By the end of the course, students will be able

- CO-1 To understand the production systems, layouts, material handling systems etc
- CO-2 To apply suitable planning tools and techniques in the different production systems.
- CO-3 To identify maintenance strategies for managing assets.
- CO-4 To analyze inventory models for effective management (Purchase, Inventory, Storage) of materials
- CO-5 To deploy quality control systems for assuring quality of products.

UNIT I:

Operations Management: overview, Concept, Objectives – Role and Responsibilities of Production Manager – Manufacturing Vs. Service Operation - **Strategic Decisions – Production Systems:** Intermittent and Continuous Production Systems, Job, Batch, Mass or Flow production systems **Facility Planning:** Importance, determinants of Facility Location Decisions - **Layout Planning – Principles of Layout Planning, Classification of Plant Layouts, Product layout, Process layout – Materials Handling:** Principles of Material Handling, and Material Handling Equipment’s. **Capacity Planning -Productivity and Factors Affecting Productivity – World Class Manufacturing**

UNIT II:

Production Planning and Control: Objectives, Functions, and Procedure of PPC – Production planning in Continuous, and Intermittent Production systems – Master Production Scheduling Aggregate Capacity Planning **Optimal Production Strategies:** Sequencing and Scheduling of Operations, Line balancing - **Project Management Techniques:** PERT and CPM (Theory only).– **Automation:** Definition, Concept, Tools of Automation.

UNIT III:

Work Study:– **Method Study** Process, Recording Tools – **Work Measurement** Techniques: Time Study, work sampling - **Maintenance Management:** Need for Maintenance, Types, Functions, breakdown analysis – Equipment Life Cycle, Total Productive Maintenance (TPM)– Managing of Work Environment – Waste Management: Concept, and Methods of Waste Disposal

UNIT IV:

Materials Management: Importance, and Functions – **Purchase Management:** Objectives, Purchasing Process, constraints – **Stores Management:** Functions, and Procedures of Store Management, – **Inventory Management:** Concepts, Types, Classification, Functions, and Costs of Inventory – Inventory Control Decisions –Inventory analysis models ABC, VED, FSN, HML

techniques. - **Inventory Control Techniques** EOQ Model, MRP, JIT, Kanban, and Agile Supply Chain.

UNIT V:

Quality Management: Concept, Significance of Quality and Costs of quality – Quality Assurance –Acceptance Sampling – Statistical Quality Control – Control Charts, \bar{x} and R, p-bar charts - **Quality Systems:** Need, Benefits, ISO 9001–2015, Quality Improvement Techniques: Quality Circles, Six Sigma, New QC Tools, PDCA Cycle, TQM, Kaizen – Lean Manufacturing.

Case Study (Not Exceeding 300 words / Problem from 2, 4, 5 units only)

Reference Books:

1. Chary, SN, 2013: Production and Operations Management, Tata McGraw Hill, New Delhi.
2. Elwood S. Buffa, Rakesh K. Sarin, 2013: Modern Production and Operations Management, John Wiley, New York.
3. Everett E. Adam, Jr., Ronald J. Ebert, 2000: Production and Operations Management, 5th edition, Prentice Hall of India, New Delhi.
4. Gopalakrishnan P. and Sundaresan. M., 2012: Materials Management An Integrated Approach, Prentice Hall of Indian, New Delhi.
5. Krajewski, L.J. and Ritzman, L.P., 2005: Operations Management: Strategy and Analysis, 7th edition, Addison Wesley Longman Pvt. Ltd. Delhi
6. Pannerselvam R. 1999, Production and Operations Management, Prentice Hall of India, New Delhi.
7. K.Aswathappa, K.ShridharaBhat 2017: Production and Operations Management 2nd edition, Himalaya Publishers.
8. Chunawala and Patel 2009: Production and Operations Management, 7th edition, Himalaya Publisher.
9. James P Evans and David 2007: Operations Management, Cengage, New Delhi.
10. Hamid Mori and Russel 1995: Production and Operations Management, Mcgraw-HillNewyork.
11. J.P. Saxena 2009: Production and Operations Management 2nd edition, TATA Mcgraw-Hill.
12. KanishkaBedi 2004: Production and Operations Management, Oxford university press NewDelhi.
13. UpendraKachan 2007: Production and Operations Management Text and Cases, 1st edition, EXCEL BOOKS.
14. B.Mahadevan 2010: Operations Management theory and practice, 2nd edition, Pearson.