

MBPC4007 MANAGEMENT OF MANUFACTURING SYSTEM (3-0-0)

Course Objectives:

1. To make the students to familiarize on operations planning and control activities in both manufacturing and service organizations
2. To build the students to take decisions on operations planning and control activities through by estimating forecasting future requirements, capacity, aggregate requirements, and material requirements

Module – I:

Manufacturing systems – Types and Process mapping –Manufacturing Process Planning – Definition, Scope and Elements –Manufacturing concept planning – Requirements of good manufacturing and assembly lines –Layout planning and analysis, Cellular manufacturing systems (Group Technology) – Cellular manufacturing formation –Cell formation –Methods and production flow analysis & minimization of inter-cell movement.

Module – II:

Just-in-time systems – Overview, Principles and Benefits – Seven Wastes – Elements of JIT – Design and Improvement aspects of JIT – Kanban systems, –Definition and Principles – Types of Kanban Single card and Two card Kanban – Push and Pull Concepts of Kanban – Constant Work-in-Process (CONWIP) – Concept and comparison with Kanban system.

Module – III:

Synchronous manufacturing (Theory of Constraints) – Definition, Operation planning and control based on theory of constraints – Measures of Performance – Constraints in manufacturing system – Drum-Buffer-Rope (DBR) Methodology – Flexible manufacturing systems (FMS) –Meaning, Components and types – Conceptual model of FMS – Applications of FMS, Machine loading and scheduling.

Course Outcomes:

- CO-1: Gain more insights on the concept of Manufacturing System.
- CO-2: Briefly explain insights on cellular manufacturing systems as present day requirement in industry.
- CO-3: Apply in to Just-in-Time conceptual ideas and familiar about the lean philosophy, Kaizen concept and Six Sigma.
- CO-4: Gain knowledge on synchronizing and Flexible manufacturing systems special reference to product industry.

Books:

1. Ajay K Garg, Production and Operations Management, McGraw Hill Education (India) Pvt. Ltd., 2012, Reprint2017.
2. William J Stevenson, Operations Management, Twelfth Edition, McGraw Hill Education (India) Pvt. Ltd., 2017, Reprint2018.
3. R. Panneerselvam, Production & operations management, Prentice Hall India private limited, 2017.
4. Aswathappa, K., ShridharaBhat, K., Production and Operations Management , Himalaya Publishing House,2014
5. Mahadevan B., Operations Management Theory and Practice, Pearson Publication, 3rdEdition, 2015