

4 <sup>th</sup> Semester	18MBA401D	Management of Manufacturing System	L-T-P 3-0-0	3 Credits	35 hrs
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### COURSE OBJECTIVES

- To make the students to understand underlying concepts of general manufacturing systems
- To provide more insights on cellular manufacturing systems
- To expose the students in to Just-in-Time conceptual ideas and familiar about the same
- To provide knowledge on synchronizing and Flexible manufacturing systems

**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.

### BOOKS :

- Shahrukh A. Irani, Handbook of Cellular Manufacturing Systems, John Wiley and Sons Inc., 1999
- T.C. Cheng, S. Podolsky, Just-in-Time Manufacturing: An introduction, Second edition, Chapman and Hall Publications, 1996
- Mahadevan B., Operations Management Theory and Practice, Pearson Publication, 3<sup>rd</sup> Edition, 2015
- R. Panneerselvam, Production & operations management, Prentice Hall India private limited, 2017.
- Aswathappa, K., ShridharaBhat, K., Production and Operations Management , Himalaya Publishing House, 2014