Manufacturing Systems Management - Video course

COURSE OUTLINE

This course introduces the viewer to the concepts of Manufacturing Systems Management.

The course primarily addresses Cellular Manufacturing, JIT systems, Synchronous manufacturing and Flexible manufacturing.

Topics such as cell formation, cell scheduling, JIT systems, TOC principles, Loading and scheduling in Flexible manufacturing are addressed.

COURSE DETAIL

S.No	Topics	No.of Hours
1	Introduction. a. The challenge. b. Requirements of Manufacturing. c. Various methodologies. d. Cellular Manufacturing.	3
2	Cell Formation - Early methods. a. Production Flow Analysis. b. Rank Order Clustering. c. Similarity based methods.	4
3	Cell formation algorithms. a. P median formulation. b. Assignment formulation. c. ZODIAC algorithm. d. Metaheuristics. e. Considering sequence. f. Considering workload.	8
4	Minimizing intercell movement. a. Remainder cells. b. Machine duplication.	3

NP-TEL

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Management

Coordinators:

Prof. G. Srinivasan
Department of Management StudiesIIT Madras

	c. Part subcontracting.	
5	Product based cell formation.	2
6	Operator Allocation. a. Rabbit chasing. b. Dedicating operators. c. Static operator allocation problems. d. Network Models.	4
7	Cell scheduling and sequencing. a. Part Family sequencing. b. Dispatching rules.	3
8	Cell layout.	2
9	Just In Time Manufacturing. a. Concepts and definitions. b. Implementation issues. c. Kanban. d. CONWIP and Kanban.	6
10	Synchronous Manufacturing. a. The Goal. b. Principles of SM. c. TOC and LP. d. Scheduling.	7
11	Flexible Manufacturing Systems. a. Concepts. b. FMS loading problems. c. FMS scheduling problems.	5
	Total	47

References:

1. **Askin R G and Strandridge C R (1993)**, Modelling and Analysis of Manufacturing.
2. **Askin R G and Goldberg J B (2002)**, Design and Analysis of Lean Production Systems, John Wiley and Sons.