VIKASH INSTITUTE OF TECHNOLOGY, BARGARH

LESSON PLAN

Semester: 6th	**Year: 3rd**		**Course: B.Tech**
Branch : ME	**Sub: Computer Integrated Manufacturing and FMS**		**Total Credit:03**
	Sub Code : RME6D003		
Name of the Faculty:	**Dr. CHINMAY DEHERI**		
Designation :	**Associate Professor**		
Department :	**Mechanical Engineering**		
Session	**2024-25**		
Recommended Books	**Text book**: **1.Automation, Production Systems and Computer Integrated Manufacturing: M.P. Groover, Pearson Publication.** **2. Automation, Production systems & Computer Integrated Manufacturing, M.P Groover, PHI.** **Reference Books**: **1.CAD/CAM/CIM, P.Radhakrishnan, S.Subramanyam and V.Raju, New Age International** **2.Flexible Manufacturing Systems in Practice, J Talavage and R.G. Hannam, Marcell Decker**		

Sl. No.	Lecture No.	Topics to be covered	No. of Classes
		MODULE-1	
1	Lecture-01	Fundamentals of Manufacturing and Automation: Production systems	**12**
2	Lecture-02	Automation principles and its strategies; Manufacturing industries	
3	Lecture-03	Types of production function in manufacturing	
4	Lecture-04	Automation principles and strategies,	
5	Lecture-05	Elements of automated system, automation functions	
6	Lecture-06	Level of automation; product/production relationship	
7	Lecture-07	Production concept and mathematical models for production rate	
8	Lecture-08	Capacity, utilization and availability	
9	Lecture-09	Cost-benefit analysis	
10	Lecture-10	Computer Integrated Manufacturing	
11	Lecture-11	Basics of product design	
12	Lecture-12	CAD/CAM, Concurrent engineering, CAPP and CIM	
		MODULE-2	
13	Lecture-13	Industrial Robotics	**12**
14	Lecture-14	Robot anatomy, control systems, end effectors, sensors and actuators	
15	Lecture-15	Fundamentals of NC technology, CNC, DNC, NC part programming	
16	Lecture-16	Robotic programming, Robotic languages, work cell control	
17	Lecture-17	Robot cleft design, types of robot application	
18	Lecture-18	Processing operations, Programmable Logic controllers: Parts of PLC	
19	Lecture-19	Operation and application of PLC,	
20	Lecture-20	Material Handling and automated storage and retrieval systems	
21	Lecture-21	Automatic data capture	
22	Lecture-22	Identification methods	
23	Lecture-23	Bar code and other technologies	
24	Lecture-24	Fundamentals of Net workings	
		MODULE-3	
25	Lecture-25	Introduction to manufacturing systems	**12**
26	Lecture-26	Group Technology and cellular manufacturing	
27	Lecture-27	Partfamilies, Part classification and coding	
28	Lecture-28	Production flow analysis, Machine cell design	
29	Lecture-29	Applications and Benefits of Group Technology	
30	Lecture-30	Flexible Manufacturing system: Basics of FMS, components of FMS	
31	Lecture-31	FMS planning and implementation, flexibility	
32	Lecture-32	Quantitative analysis of flexibility	
33	Lecture-33	Application and benefits of FMS	
34	Lecture-34	Computer Aided Quality Control: objectives of CAQC	
35	Lecture-35	QC and CIM,	
36	Lecture-36	CMM and Flexible Inspection systems.	

Signature of Faculty Member **Signature of HOD**

PRINCIPAL