

GOVERNMENT POLYTECHNIC, MALKANGIRI
DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN

Discipline: Mechanical Engineering	Semester 4th	Name of the Teaching Faculty: BIBHASH MANDAL
COMPUTER- INTEGRATED MANUFACTURING	No. of days/week class allotted 3	Semester From date:22.12.2025 To date:18.04.2026 No. of Week: 15
PRE- REQUISITE	CIM encompasses the entire range of product development and manufacturing activities	
Course Outcomes	1.Describe basic components and networks involved in CIM. 2.Illustrate hardware, software and product modeling at industry level. 3.Apply process planning and program coding of task.. 4.Design a manufacturing cell and cellular manufacturing system.. 5.Design automated material handling and storage systems for a typical production system.	
Week	Class Day	Theory/Practical Topics
1st	1st	Concept of Computer Integrated Manufacturing (CIM)
	2nd	Basic components of Concept of Computer Integrated Manufacturing
	3rd	Basic components of Concept of Computer Integrated Manufacturing
2nd	1st	Distributed database system
	2nd	distributed communication system
	3rd	distributed communication system
3rd	1st	computer networks for manufacturing
	2nd	computer networks for manufacturing
	3rd	future automated factory
4th	1st	social and economic factors of Concept of Computer Integrated Manufacturing
	2nd	Introduction of Computer Aided Design (CAD)
	3rd	Introduction of Computer Aided Design (CAD)
5th	1st	CAD hardware and software
	2nd	product modelling,
	3rd	product modelling,
6th	1st	automatic drafting
	2nd	engineering analysis;
	3rd	FEM design review and evaluation
7th	1st	FEM design review and evaluation
	2nd	Group Technology Centre.
	3rd	Introduction of Computer Aided Manufacturing
8th	1st	Computer assisted NC part programming for plain turning and step turning
	2nd	Computer assisted NC part programming for plain turning and step turning
	3rd	Computer assisted robot programming
9th	1st	Computer assisted robot programming
	2nd	computer aided process
	3rd	planning (CAPP); computer aided material requirements planning (MRP)
10th	1st	planning (CAPP); computer aided material requirements planning (MRP)
	2nd	Introduction of Computer aided production scheduling
	3rd	Computer aided production scheduling
11th	1st	computer aided inspection planning;
	2nd	computer aided inspection planning;
	3rd	computer aided inventory planning
12th	1st	computer aided inventory planning
	2nd	Flexible manufacturing system (FMS);
	3rd	Flexible manufacturing system (FMS);
13th	1st	concept of flexible manufacturing
	2nd	concept of flexible manufacturing
	3rd	Integrating NC machines, robots, AGVs, and other NC equipment
14th	1st	Integrating NC machines, robots, AGVs, and other NC equipment
	2nd	Integrating NC machines, robots, AGVs, and other NC equipment
	3rd	Computer aided quality control
15th	1st	business functions
	2nd	computer aided forecasting
	3rd	office automation

Learning Resources:

1. CAD, CAM, CIM by P. Radhakrishnan and S. Subramanyan, New Age International Publishers.
2. Computer Integrated Manufacturing by Paul G. Rankey, Prentice Hall.
3. Robotics Technology and Flexible Automation – S.R. Deb, TMH

Bibhash Mandal
Signature of faculty

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signature of HOD/

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signature of Principal

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signature of Academic coordinator