NILASAILA INSTITUTE OF SCIENCE & TECHNOLOGY
SERGARH-756060, BALASORE (ODISHA)
(Approved by AICTE& affiliated to SCTE&VT, Odisha)

LESSON PLAN

SUBJECT: TH-4 (CAD/CAM & AUTOMATION)

CHAPTER WISE DISTRIBUTION OF PERIODS

Sl.No.	Name of the chapter as per the Syllabus	No. of Periods as per the Syllabus	No. of periods actually needed
1	INTRODUCTION TO CAD/CAM	6	8
2	GEOMETRICMODELING	12	11
3	INTRODUCTION TO COMPUTER NUMERICAL CONTROL	6	6
4	PARTPROGRAMMING	14	14
5	INDUSTRIAL ROBOTICS	12	11
6	AUTOMATION	10	10
	Total Period:	**60**	**62**

Discipline: AUTOMOBILE ENGINEERING	Semester: 6th	**Name of the Teaching Faculty:** Er.Pradyumna Kumar Khilar
		SESSION : 2023-24 **EXAMINATION :** 2024(S)
Week	**Class Day**	**Topics to be Covered**
1st	**1st**	1. Introduction to CAD / CAM
	2nd	Computers in industrial manufacturing.
	3rd	Computers in industrial manufacturing.
	4th	Product Cycle, CAD /CAM Hardware:Basicstructure, CPU, Memory, I/O devices Storage devices and system configuration.
2nd	**1st**	Product Cycle, CAD /CAM Hardware:Basic structure, CPU, Memory, I/O devices, Storage devices and system configuration.
	2nd	Product Cycle, CAD /CAM Hardware:Basic structure, CPU, Memory, I/O devices, Storage devices and system configuration.
	3rd	2. Geometric Modelling :
	4th	2. Geometric Modelling :
3rd	**1st**	Requirement of geometric modeling.
	2nd	Requirement of geometric modeling.
	3rd	Types of Geometric models.
	4th	Types of Geometric models.
4th	**1st**	Types of Geometric models.
	2nd	Types of Geometric models.
	3rd	Geometri construction method-sweep, solid moedlling – Primitives & Boolean operations, free
	4th	Geometri construction method-sweep, solid moedlling – Primitives & Boolean operations, free
5th	**1st**	Geometri construction method-sweep, solid moedlling – Primitives & Boolean operations, free
	2nd	Geometri construction method-sweep, solid moedlling – Primitives & Boolean operations, free
	3rd	3. Introduction to computer numerical Control
	4th	3. Introduction to computer numerical Control
6th	**1st**	Introduction – NC, CNC, DNC,
	2nd	Introduction – NC, CNC, DNC,
	3rd	Advantages of CNC

Week	Class Day	Topics to be Covered
6th	4th	Advantages of CNC
7th	1st	Advantages of CNC
	2nd	The coordinate system in CNC
	3rd	The coordinate system in CNC
	4th	Motion control system – point to point, straight line, Continuous path
8th	1st	Motion control system – point to point, straight line, Continuous path
	2nd	Motion control system – point to point, straight line, Continuous path
	3rd	Application of CNC.
	4th	Application of CNC.
9th	1st	4. Part programming :
	2nd	**INTERNAL ASSESSMENT**
	3rd	**INTERNAL ASSESSMENT**
	4th	Manual part programming
10th	1st	Manual part programming
	2nd	NC- Words, Programming format
	3rd	NC- Words, Programming format
	4th	NC- Words, Programming format
11th	1st	Part programming
	2nd	Part programming
	3rd	use of subroutines and do loops,
	4th	use of subroutines and do loops,
12th	1st	computer aided part programming
	2nd	computer aided part programming
	3rd	computer aided part programming
	4th	5. Industrial Robotics

Week	Class Day	Topics to be Covered
13th	1st	5. Industrial Robotics
	2nd	Introduction, physical configuration
	3rd	Introduction, physical configuration
	4th	basic robot motions, technical features such as work volume,precision and speed of movement,weight carrying capacity , drive system,End effectors,robot sensorsa
14th	1st	basic robot motions, technical features such as work volume,precision and speed of movement,weight carrying capacity , drive system,End effectors,robot sensorsa
	2nd	basic robot motions, technical features such as work volume,precision and speed of movement,weight carrying capacity , drive system,End
	3rd	basic robot motions, technical features such as work volume,precision and speed of movement,weight carrying capacity , drive system,End effectors,robot sensorsa
	4th	Application- Material transfer, machine loading,welding,spray coating,processing operation,assembly,inspection.
15th	1st	Application- Material transfer, machine loading,welding,spray coating,processing operation,assembly,inspection.
	2nd	Application- Material transfer, machine loading,welding,spray coating,processing operation,assembly,inspection.
	3rd	Application- Material transfer, machine loading,welding,spray coating,processing operation,assembly,inspection.
	4th	6. Automation :
16th	1st	Basic elements of automated system,
	2nd	advanced automation functions
	3rd	advanced automation functions
	4th	REVISION