



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)

Name of the Faculty-Er.Pradyumna Kumar Khilar

Branch- Automobile Engineering

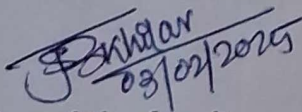
Session- 2024-25

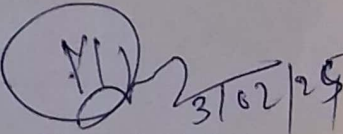
Semester- 6th

Examination- 2025 (S)

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	GEOMETRIC MODELING	12	11
3	INTRODUCTION TO COMPUTER NUMERICAL CONTROL	6	6
4	PART PROGRAMMING	14	14
5	INDUSTRIAL ROBOTICS	12	11
6	AUTOMATION	10	10
	Total Period:	60	62

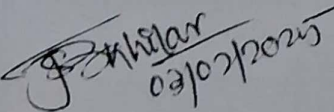

03/02/2025
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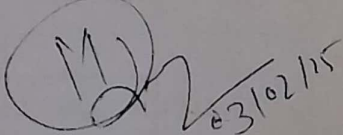

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Discipline: AUTOMOBILE ENGINEERING	Semester: 6th	Name of the Teaching Faculty: Er.Pradyumna Kumar Khilar	
		SESSION : 2024-25	EXAMINATION : 2025 (S)
Week	Class Day	Topics to be Covered	
1 st	1 st	1. Introduction to CAD / CAM	
	2 nd	Computers in industrial manufacturing.	
	3 rd	Computers in industrial manufacturing.	
	4 th	Product Cycle, CAD /CAM Hardware:Basicstructure, CPU, Memory, I/O devices Storage devices and system configuration.	
2 nd	1 st	Product Cycle, CAD /CAM Hardware:Basic structure, CPU, Memory, I/O devices, Storage devices and system configuration.	
	2 nd	Product Cycle, CAD /CAM Hardware:Basic structure, CPU, Memory, I/O devices, Storage devices and system configuration.	
	3 rd	2. Geometric Modelling :	
	4 th	2. Geometric Modelling :	
3 rd	1 st	Requirement of geometric modeling.	
	2 nd	Requirement of geometric modeling.	
	3 rd	Types of Geometric models.	
	4 th	Types of Geometric models.	
4 th	1 st	Types of Geometric models.	
	2 nd	Types of Geometric models.	
	3 rd	Geometri construction method-sweep, solid moedlling – Primitives & Boolean operations, free	
	4 th	Geometri construction method-sweep, solid moedlling – Primitives & Boolean operations, free	
5 th	1 st	Geometri construction method-sweep, solid moedlling – Primitives & Boolean operations, free	
	2 nd	Geometri construction method-sweep, solid moedlling – Primitives & Boolean operations, free	
	3 rd	3. Introduction to computer numerical Control	
	4 th	3. Introduction to computer numerical Control	
6 th	1 st	Introduction – NC, CNC, DNC,	
	2 nd	Introduction – NC, CNC, DNC,	
	3 rd	Advantages of CNC	

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

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


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