

LESSON PLAN

Discipline : Mechanical Engg.	Semester: 5th Sem (2024-25)	Name of the Teaching Faculty: Monalisa Sahoo, W/S Supttd./HOD Satyabrata Sahoo, Lect. (ELECT)
Subject: Mechatronics	No. Of Class/Week: 4P/week	Semester From Date:01/07/2024 to 08/11/2024 Total No of Weeks :15 Weeks
Week	Class Day	TOPICS TO BE COVERED
1st	1st	INTRODUCTION TO MECHATRONICS: Definition, Advantages & disadvantages of Mechatronics.
	2nd	Application of Mechatronics
	3rd	Scope of Mechatronics in Industrial Sector.
	4th	Components of a Mechatronics System
2nd	1st	Importance of mechatronics in automation
	2nd	SENSORS AND TRANSDUCERS: Definition and classification of transducer
	3rd	Classification of Transducer
	4th	Electromechanical Transducers
3rd	1st	Transducers Actuating Mechanisms
	2nd	Sensors and its classifications
	3rd	Displacement & Positions Sensors
	4th	Velocity and Motion sensors
4th	1st	Force and Pressure sensors
	2nd	Temperature sensors
	3rd	Light sensors
	4th	Review class and Discussion
5th	1st	Assignment Evaluation & Class Test
	2nd	MECHANICAL ACTUATORS:
	3rd	Machine, Kinematic Link, Kinematic Pair
	4th	Mechanism, Slider crank Mechanism
6th	1st	Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear
	2nd	Belt & Belt drive

7th	3rd	Bearings
	4th	Electrical Actuator: Switches and relays Robotic systems
	1st	Solenoids
	2nd	D.C Motors
8th	3rd	A.C Motors
	4th	Stepper Motors, Specification and control of stepper motors
	1st	Servo Motors D.C & A.C
	2nd	Review class and Discussion
9th	3rd	PROGRAMMABLE LOGIC CONTROLLERS(PLC)
	4th	Introduction, Definition and Advantages of PLC
	1st	Introduction, Definition and Advantages of PLC
	2nd	Architecture basic internal structures
10th	3rd	Input/output Processing and Programming
	4th	Mnemonics
	1st	Master and Jump Controllers
	2nd	Review class and Discussion
11th	3rd	ELEMENTS OF CNC MACHINES
	4th	Introduction to Numerical Control of machines and CAD/CAM
	1st	NC machines
	2nd	CNC machine
12th	3rd	CAD and CAM
	4th	Software and hardware for CAD/CAM, Functioning of CAD/CAM system
	1st	Features and characteristics of CAD/CAM system
	2nd	Application areas for CAD/CAM
13th	3rd	Introduction to CNC Machines, Elements of CNC machines
	4th	Machine Structure
	1st	Guideways/Slide ways and its types, Factors of design of guideways
	2nd	Spindle drives
14th	3rd	Feed drive
	4th	Spindle and Spindle Bearings
	1st	Review class and Discussion
	2nd	ROBOTICS: Definition, Function and laws of robotics

	3rd	Types of industrial robots
15th	4th	Robotic systems
	1st	Advantages and Disadvantages of robots
	2nd	Review class
	3rd	Assignment Evaluation
	4th	Revision

Refa
29/7/24