LESSON PLAN

Discipline : Mechanical Engineering	**Semester: 5th Sem**	**Name of the Teaching Faculty: G.C SWIN**
Subject: Mechatronics	No. Of Days/Week Class Allotted	Semester From Date: 01/07/2024 To Date: 16/112/2024 No. Of Weeks : 15
Week	**Class Day**	**Theory/Practical Topics**
1st	1st	**INTRODUCTION TO MECHATRONICS:** Definition, Advantages & disadvantages of Mechatronics.
	2nd	Application of Mechatronics, Importance of mechatronics in automation.
	3rd	Components of a Mechatronics System
	4th	Review class and Discussion
2nd	1st	Assignment Evaluation & Class Test
	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	Electromechanical Transducers
4th	1st	Transducers Actuating Mechanisms
	2nd	Sensors and its classifications
	3rd	Displacement &Positions Sensors
	4th	Velocity and Motion sensors
5th	1st	Force and Pressure sensors.
	2nd	Temperature sensors
	3rd	Light sensors
	4th	Review class and Discussion
6th	1st	Assignment Evaluation & Class Test

	2nd	**ROBOTICS:** Definition, Function and laws of robotics
	3rd	Types of industrial robots, Advantages, Disadvantages and Applications of robots
	4th	Robotic systems
7th	1st	Review class and Discussion
	2nd	Assignment Evaluation & Class Test
	3rd	**ELEMENTS OF CNC MACHINES:** Introduction to Numerical Control of machines
	4th	NC machines
8th	1st	CNC machine
	2nd	CAD and CAM
	3rd	Software and hardware for CAD/CAM, Functioning of CAD/CAM system
	4th	Features and characteristics of CAD/CAM system, Application areas for CAD/CAM
9th	1st	Review class and Discussion
	2nd	**Introduction to CNC Machines,** Elements of CNC machines
	3rd	Machine Structure
	4th	Guide ways/Slide ways and its types
10th	1st	Drives and types, Spindle drives
	2nd	Feed drive
	3rd	Spindle and Spindle Bearings
	4th	Review class and Discussion
11th	1st	Assignment Evaluation & Class Test
	2nd	**PROGRAMMABLE LOGIC CONTROLLERS(PLC):**
	3rd	Introduction, Definition and Advantages of PLC, Selection and uses of PLC
	4th	Architecture basic internal structures
12th	1st	Input/output Processing and Programming
	2nd	Mnemonics, Master and Jump Controllers
	3rd	Review class and Discussion
	4th	Assignment Evaluation & Class Test
13th	1st	**MECHANICAL ACTUATORS:**
	2nd	Machine, Kinematic Link, Kinematic Pair
	3rd	Mechanism, Slider crank Mechanism
	4th	Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear

14th	1st	Belt & Belt drive
	2nd	**Electrical Actuator:** Switches and relays, Solenoids
	3rd	D.C Motors
	4th	A.C Motors
15th	1st	Stepper Motors, Specification and control of stepper motors
	2nd	Servo Motors D.C & A.C
	3rd	Review class
	4th	Assignment Evaluation & Class Test

Signature of the faculty