

ASIAN SCHOOL OF TECHNOLOGY
Department of Mechanical Engineering

<u>SL NO.:03 LESSON PLAN</u>		
Name of Faculty- Priyaranjan Pattanaik		
LESSON PLAN FOR MECHATRONICS		
Mechanical Engineering	5 TH SEMESTER	Session- 2024-25
MECHATRONICS	Lecture : 04/ Week	Semester : 5th
		No. of weeks :15
week	CLASS DAY	THEORY TOPICS
1	1st (CH 1)`	Definition of Mechatronics, course outcomes.
	2nd	Advantages & disadvantages of Mechatronics
	3rd	Scope of Mechatronics in Industrial Sector
	4th	Importance of mechatronics in automation
2	1st (CH 2)	Sensors And Transducers
	2nd	Classification of Transducers
	3rd	Electromechanical Transducers
	4th	Transducers Actuating Mechanisms
3	1st	Displacement & Positions Sensors
	2nd	Velocity, motion
	3rd	force and pressure sensors

	4th	Temperature and light sensors.
4	1st (CH 3)	Mechanical Actuators
	2nd	Machine
	3rd	Kinematic Link
	4th	Kinematic Pair
5	1st	Mechanism
	2nd	Slider crank Mechanism
	3rd	Gear Drive
	4th	Spur gear
6	1st	Bevel gear
	2nd	Helical gear
	3rd	worm gear
	4th	Belt & Belt drive
7	1st	Bearings
	2nd	Electrical Actuator
	3rd	Switches and relay
	4th	Solenoid
8	1st	D.C Motors
	2nd	A.C Motors
	3rd	Stepper Motors
	4th	Specification and control of stepper motors

9	1st	Servo Motors D.C & A.C
	2nd (CH 4)	Introduction of PROGRAMMABLE LOGIC CONTROLLERS(PLC)
	3rd	Advantages of PLC
	4th	Selection and uses of PLC
10	1st	Architecture basic internal structures
	2nd	Input/output Processing and Programming
	3rd	Mnemonics
	4th	Master and Jump Controllers
11	1st (CH 5)	Introduction to Numerical Control of machines and CAD/CAM
	2nd	Elements of CNC Machines
	3rd	NC machines, CNC machines
	4th	CAD, CAM
12	1st	Software and hardware for CAD/CAM
	2nd	Functioning of CAD/CAM system
	3rd	Features and characteristics of CAD/CAM system
	4th	Application areas for CAD/CAM
13	1st	elements of CNC machines Introduction
	2nd	Machine Structure

	3rd	Guideways/Slide ways, Introduction and Types of Guideways
	4th	Factors of design of guideways
14	1st	Drives
	2nd	Spindle drives
	3rd	Feed drive
	4th	Spindle and Spindle Bearings
15	1st (CH 6)	Definition, Function and laws of robotics
	2nd	Types of industrial robots
	3rd	Robotic systems
	4th	Advantages and Disadvantages of robots

TOTAL PERIODS: 60

NO. OF WEEKS : 15