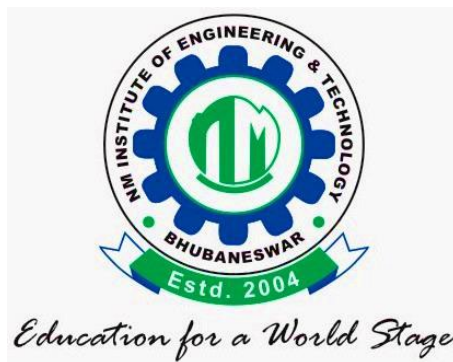


NM INSTITUTE OF ENGINEERING & TECHNOLOGY BHUBANESWAR

Mechanical Engineering Department



LESSON PLAN

Session 2023-2024

Semester: 5th

Subject : MECHATRONICS

Faculty Name: RABI NARAYAN BAG

Subject: Mechatronics No of Days/per week class allotted: _____

Semester from date : _____ to date: _____ No. of Weeks: _____

Week	Class Day	Theory topics
1	1	Definition of Mechatronics
	2	Advantages & disadvantages of Mechatronics
	3	Application of Mechatronics
	4	Scope of Mechatronics in Industrial Sector
2	1	Components of a Mechatronics System
	2	Importance of mechatronics in automation
	3	Defination of Transducers
	4	Classification of Transducers
3	1	Electromechanical Transducers
	2	Transducers Actuating Mechanisms
	3	Displacement & Positions Sensors
	4	Velocity, motion, force and pressure sensors.
4	1	Temperature and light sensors.
	2	Mechanical Actuators Machine, Kinematic Link, Kinematic Pair
	3	Mechanism, Slider crank Mechanism
	4	Gear Drive
5	1	Spur gear,
	2	Bevel gear
	3	Helical gear
	4	worm gear
6	1	Belt & Belt drive
	2	Bearings, types of bearings
	3	INTRODUCTION TO Electrical Actuator
	4	Switches and relay , Solenoid and D.C Motors
7	1	A.C Motors and Stepper Motors
	2	Specification and control of stepper motors
	3	Servo Motors D.C
	4	A.C Motors

Signature of Faculty

Subject: _____ No of Days/per week class allotted: _____

Semester from date : _____ to date: _____ No. of Weeks: _____

Week	Class Day	Theory topics
8	1	Introduction to PROGRAMMABLE LOGIC CONTROLLERS(PLC)
	2	Selection of PLC
	3	Uses of PLC
	4	Advantages of PLC
9	1	Architecture basic internal structures
	2	Input/output Processing
	3	Different types Programming
	4	Mnemonics
10	1	Types of Mnemonics
	2	Explain Controllers
	3	Master Controllers
	4	Jump Controllers
11	1	Introduction to Numerical Control of machines
	2	CAD/CAM
	3	CNC machines
	4	Software and hardware for CAD/CAM
12	1	Introduction and Types of Guideways
	2	Features of CAD/CAM system
	3	characteristics of CAD/CAM system
	4	Application areas for CAD/CAM
13	1	Introduction to elements of CNC machines
	2	Machine Structure
	3	Advantages of machine structure
	4	Introduction and Types of Guideways
14	1	Factors of design of guideways
	2	Feed drive
	3	Spindle drives
	4	Spindle and Spindle Bearings
15	1	Definition, Function and laws of robotics
	2	Types of industrial robots
	3	Robotic systems
	4	Advantages and Disadvantages of robots

Signature of Faculty