JHARSUGUDA ENGINEERING SCHOOL, JHARSUGUDA	
MECHANICAL ENGG. DEPARTMENT	
Name of the Faculty: PUJA SWAIN / ALOK BARA	Session: 2021-22
Course code.: Th 4	Course Name:MECHATRONICS
Programe: Diploma	Department: Mechanical Engg. Deptt.
Semester: 5TH	Section: M1,M2
Branch: MECHANICAL ENGG	

Week	Period	Unit	Hours	Topic to be Covered
1	1	1	5	INTRODUCTION TO MECHATRONICS,Definition of Mechatronics
	2			Advantages & disadvantages of Mechatronics,Application of Mechatronics
	3			Scope of Mechatronics in Industrial Sector
	4			Components of a Mechatronics System
2	5			Importance of mechatronics in automation
	6	2	10	SENSORS AND TRANSDUCERS:Defination of Transducers
	7			Classification of Transducers
	8			Electromechanical Transducers
3	9			Transducers Actuating Mechanisms
	10			Displacement
	11			Positions Sensors
	12			Velocity, motion
4	13			force and pressure sensors.
	14			Temperature
	15			light sensors
	16			ACTUATORS, MECHANICAL, ELECTRICAL:Mechanical Actuators
	17			Machine, Kinematic Link, Kinematic Pair

5	18	3	10	Mechanism, Slider crank Mechanism
	19			Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear
	20			Belt & Belt drive
6	21			Bearings
	22			Electrical Actuator:Switches and relay
	23			Solenoid, D.C Motors, A.C Motors
	24			Stepper Motors,Specification and control of stepper motors
7	25			Servo Motors D.C & A.C
	26	4	15	PROGRAMMABLE LOGIC CONTROLLERS(PLC)
	27			Introduction
	28			Advantages of PLC
8	29			Selection and uses of PLC
	30			Architecture basic internal structures
	31			Architecture basic internal structures
	32			Architecture basic internal structures
9	33			Architecture basic internal structures
	34			Input/output Processing and Programming
	35			Input/output Processing and Programming
	36			Input/output Processing and Programming
10	37			Input/output Processing and Programming
	38			Mnemonics
	39			Master and Jump Controllers
	40			Master and Jump Controllers
11	41			ELEMENTS OF CNC MACHINES:1 Introduction to Numerical Control of machines and CAD/CAM
	42			NC machines,CNC machines
	43			CAD/CAM
	44			Software and hardware for CAD/CAM

	45			Functioning of CAD/CAM system
	46	4	15	Features and characteristics of CAD/CAM system
	47			Application areas for CAD/CAM
12	48			Introduction: elements of CNC machines
	49			Machine Structure
	50			Guideways/Slide ways
	51			Introduction and Types of Guideways
13	52			Factors of design of guideways
	53			Drives:Spindle drives
	54			Feed drive
	55			Spindle and Spindle Bearings
14	56	5	5	ROBOTICS:Definition
	57			Function and laws of robotics
	58			Types of industrial robots
	59			Robotic systems
15	60			Advantages and Disadvantages of robots

Signature of faculty member

Signature of i/c HOD