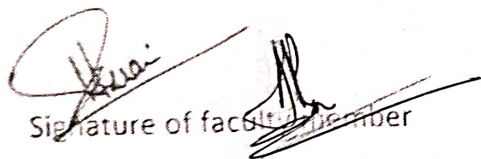


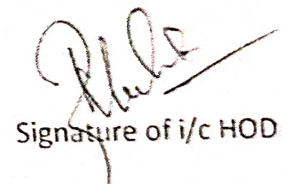
HARSHGUDA ENGINEERING SCHOOL HARSHGUDA	
MECHANICAL ENGG. DEPARTMENT	
Name of the Faculty PUJA SWAIN/ ALOK BARA	Section 2021-22
Course code: Th 4	Course Name: MECHATRONICS
Programme: Diploma	Department: Mechanical Engg. Deptt.
Semester: 5TH	Section: MI, M2
Branch: MECHANICAL ENGG	

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

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

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


 Signature of faculty member


 Signature of i/c HOD