

BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF MECHANICAL ENGINEERING



LESSON PLAN

SUBJECT: MECHATRONICS (TH 4)
FACULTY: Er. Prabir Ku. Swain

Er. Prabir Ku. Swain

ACCADEMIC SESSION: 2024-25
SEMESTER: 5TH
SEC: A

H.O.D.
Sd/-

H.O.D (MECH. Engg.)

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Discipline: Mechanical Engineering Subject: Mechatronics		Semester: 5 th A		Name of the teaching faculty: Er. PRABIR KUMAR SWAIN
No. of Days/ per week class allotted: 04periods per week (TUE-1 period, Wed-1 period, Thu-1 period, Fri-1 period)		Semester From Date: 01-07-2024 To Date: 11-11-2024 No. of weeks: 19 weeks		Theory Topics
Week	Class Day	No of period available		
1ST	02-JUL-2024	1	1.0 INTRODUCTION TO MECHATRONICS	
	03-JUL-2024	1	1.1 Definition of Mechatronics	
	04-JUL-2024	1	1.2 Advantages & disadvantages of Mechatronics.	
	05-JUL-2024	1	1.3 Application of Mechatronics	
	09-JUL-2024	1	1.4 Scope of Mechatronics in Industrial Sector	
2ND	10-JUL-2024	1	1.5 Components of a Mechatronics System	
	11-JUL-2024	1	1.6 Importance of mechatronics in automation	
	12-JUL-2024	1	Previous year semester question discussion	
3RD	16-JUL-2024	1	6.0 ROBOTICS	
	18-JUL-2024	1	6.1 Definition, Function and laws of robotics	
		1	6.2 Types of industrial robot	
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5TH	19- JUL -2024	1	6.3 Robotic systems
	23- JUL -2024	1	6.4 Advantages and disadvantages of robots
	24- JUL -2024	1	Previous year semester question discussion
	25- JUL -2024	1	CLASS TEST-01
	26- JUL -2024	1	5.1.2 CNC machines
	30C- JUL -2024	1	5.1.2 CNC machines
	31- JUL -2024	1	5.1.3.1 CAD
	01-AUG-2024	1	5.1.3.2 CAM
	03- AUG -2024	1	5.1.3.4 Functioning of CAD/CAM system
	05- AUG -2024	1	5.1.3.4 Features and characteristics of CAD/CAM system
6TH	07- AUG -2024	1	5.1.3.4 Features and characteristics of CAD/CAM system
	08- AUG -2024	1	5.1.3.5 Application areas for CAD/CAM
	10- AUG -2024	1	2.Elements of CNC machines
			5.2.1 Introduction



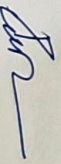
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7TH	12- AUG -2024	1	5.2.2 Machine Structure
	14- AUG -2024	1	5.2.3 Guideways/Slide ways
	16- AUG -2024	1	5.2.3.2 Factors of design of guideways
	17-AUG-2024		5.2.4 Drives 5.2.4.1 Spindle drives
8TH	20- AUG -2024	1	5.2.4 Drives 5.2.4.1 Spindle drives
	21- AUG -2024	1	5.2.4.2Feed drive 5.2.5 Spindle and Spindle Bearings
	22- AUG -2024	1	5.2.4.2Feed drive 5.2.5 Spindle and Spindle Bearings
	23- AUG -2024	1	Previous year semester question discussion



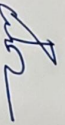
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	No. of Days/ per week class allotted: 04 periods per week (MON-1 period, TUE-1 period, Thu-1 period, Fri -1 period)		
9TH	27- AUG -2024	1	CLASS TEST-02
	29- AUG -2024	1	4.0 PROGRAMMABLE LOGIC CONTROLLERS(PLC) 4.1 Introduction
10TH	30- AUG -2024	1	4.2 Advantages of PLC Selection and uses of PLC
	02-SEP-2024	1	4.4 Architecture basic internal structures
	03- SEP -2024	1	4.5 Input/output Processing and Programming
	05- SEP -2024	1	4.5 Input/output Processing and Programming
	06-SEP-2024		4.5 Input/output Processing and Programming
11TH	09- SEP -2024	1	4.6 Mnemonics
	10- SEP -2024	1	4.7 Master and Jump Controllers



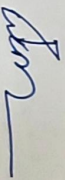
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	12- SEP -2024	1	Previous year semester question discussion
	13- SEP -2024	1	CLASS TEST -03
	17- SEP -2024	1	2.0 SENSORS AND TRANSDUCERS Definition of Transducers
12CTH	19- SEP -2024	1	2.2 Classification of Transducers
	20- SEP -2024	1	2.3 Electromechanical Transducers
	23- SEP -2024	1	2.4 Transducers Actuating Mechanisms
13TH	24- SEP -2024	1	2.5 Displacement & Positions Sensors
	26- SEP -2024	1	2.6 Velocity, motion, force and pressure sensors
	27- SEP -2024	1	2.7 Temperature and light sensors
	30- SEP -2024	1	Previous year question discussion
14TH	01-OCT-2024	1	Class test-04



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	03- OCT -2024	1	3.0 ACTUATORS-MECHANICAL, ELECTRICAL
	04-OCT-2024		3.1 Mechanical Actuators
	14- OCT -2024	1	3.1.1 Machine, Kinematic Link, Kinematic Pair
	15- OCT -2024	1	3.1.2 Mechanism, Slider crank Mechanism
15TH	17- OCT -2024	1	3.1.3 Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear
	18- OCT -2024	1	3.1.3 Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear
	21- OCT -2024	1	3.1.4 Belt & Belt drive
	22- OCT -2024	1	3.2 Electrical Actuator
16TH	24-OCT-2024		3.2.1 Switches and relay
	25-OCT-2024		3.2.2 Solenoid.
	28- OCT -2024	1	3.2.3 D.C Motors
	29-OCT-2024		3.2.4 A.C Motors
17TH			3.2.6 Specification and control of stepper motors
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	01-NOV-2024		3.2.7 Servo Motors D.C & A.C
	04-NOV-2024		REVISION
	05-NOV-2024		REVISION
18TH	07-NOV-2024		REVISION
	08-NOV-2024		REVISION
	11-NOV-2024		REVISION
	12-NOV-2024		REVISION
19TH			REVISION
			REVISION
			REVISION
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