

BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF MECHANICAL ENGINEERING



LESSON PLAN

SUBJECT: MECHATRONICS (TH 4)

FACULTY: Er. PRABIR KUMAR SWAIN

ACCADEMIC SESSION: 2023-24

SEMESTER: 5TH

SEC: B

H.O.D (MECH. Engg.)

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Discipline: Mechanical Engineering	Semester: 5th B		Name of the teaching faculty: Er. CHIRANJEEVI PATTNAIK
Subject: Mechatronics	No. of Days/ per week class allotted: 04 periods per week (Mon-1 period, Wed-1 period, Thu-1 period, Fri -1 period)		Semester From Date: 01-08-2023 To Date: 30-11-2023 No. of weeks: 18 weeks
Week	Class Day	No of period available	Theory Topics
1ST	03 -Aug-2023	1	1.0 INTRODUCTION TO MECHATRONICS 1.1 Definition of Mechatronics
	04-Aug-2023	1	1.2 Advantages & disadvantages of Mechatronics.
	05-Aug-2023	1	1.3 Application of Mechatronics
2ND	07-Aug-2023	1	1.4 Scope of Mechatronics in Industrial Sector
	10-Aug-2023	1	1.5 Components of a Mechatronics System
	11-Aug-2023	1	1.6 Importance of mechatronics in automation
	12-Aug-2023	1	2.0 SENSORS AND TRANSDUCERS 2.1 Definition of Transducers
3RD	14-Aug-2023	1	2.2 Classification of Transducers
	17-Aug-2023	1	2.3 Electromechanical Transducers
	18-Aug-2023	1	2.4 Transducers Actuating Mechanisms
	19-Aug-2023	1	2.5 Displacement & Positions Sensors

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4TH	21-Aug-2023	1	2.6 Velocity, motion, force and pressure sensors.
	24-Aug-2023	1	2.7 Temperature and light sensors
	25-Aug-2023	1	3.0 ACTUATORS-MECHANICAL, ELECTRICAL 3.1 Mechanical Actuators
	26-Aug-2023	1	3.1.1 Machine, Kinematic Link, Kinematic Pair
5TH	28-Aug-2023	1	3.1.2 Mechanism, Slider crank Mechanism
	31-Aug-2023	1	3.1.3 Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear
	01-Sep-2023	1	3.1.4 Belt & Belt drive
	02-Sep-2023	1	3.1.5 Bearings
6TH	04-Sep-2023	1	3.2 Electrical Actuator
	07-Sep-2023	1	3.2.1 Switches and relay
	08-Sep-2023	1	3.2.2 Solenoid.
	09-Sep-2023	1	3.2.3 D.C Motors
7TH	11-Sep-2023	1	3.2.4 A.C Motors
	14-Sep-2023	1	3.2.5 Stepper Motors
	15-Sep-2023	1	3.2.6 Specification and control of stepper motors
8TH	18-Sep-2023	1	3.2.7 Servo Motors D.C & A.C

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8TH	21-Sep-2023	1	4.0 PROGRAMMABLE LOGIC CONTROLLERS (PLC) 4.1 Introduction 4.2 Advantages of PLC
	22-Sep-2023	1	4.3 Selection and uses of PLC 4.4 Architecture basic internal structures
	23-Sep-2023	1	4.5 Input/output Processing and Programming
9TH	25-Sep-2023	1	4.6 Mnemonics
	29-Sep-2023	1	4.7 Master and Jump Controllers
	30-Sep-2023	1	2.7 Temperature and light sensors
10TH	05-Oct-2023	1	3.0 ACTUATORS-MECHANICAL, ELECTRICAL 3.1 Mechanical Actuators 3.1.1 Machine, Kinematic Link, Kinematic Pair
	06-Oct-2023	1	3.1.2 Mechanism, Slider crank Mechanism
	07-Oct-2023	1	3.1.3 Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear
11TH	09-Oct-2023	1	3.1.4 Belt & Belt drive 3.1.5 Bearings

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11TH	12-Oct-2023	1	3.2 Electrical Actuator 3.2.1 Switches and relay
	13-Oct-2023	1	3.2.2 Solenoid. 3.2.3 D.C Motors
12TH	16-Oct-2023	1	3.2.4 A.C Motors 3.2.5 Stepper Motors .
	19-Oct-2023	1	3.2.6 Specification and control of stepper motors
13TH	26-Oct-2023	1	3.2.7 Servo Motors D.C & A.C CLASS TEST-01
	27-Oct-2023	1	4.0 PROGRAMMABLE LOGIC CONTROLLERS(PLC) 4.1 Introduction 4.2 Advantages of PLC 4.3 Selection and uses of PLC
14TH	30-Oct-2023	1	4.4 Architecture basic internal structures
	02-Nov-2023	1	4.5 Input/output Processing and Programming
	03-Nov-2023	1	4.6 Mnemonics 4.7 Master and Jump Controllers

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15TH	04-Nov-2023	1	5.1 Introduction to Numerical Control of machines and CAD/CAM 5.1.1 NC machines 5.1.2 CNC machines
	06-Nov-2023	1	5.1.3.1 CAD 5.1.3.2 CAM 5.1.3.4 Functioning of CAD/CAM system
	09-Nov-2023	1	5.1.3.4 Features and characteristics of CAD/CAM system
	10-Nov-2023	1	5.1.3.5 Application areas for CAD/CAM
	11-Nov-2023	1	5.2 Elements of CNC machines 5.2.1 Introduction 5.2.2 Machine Structure
16TH	16-Nov-2023	1	5.2.3 Guideways/Slide ways 5.2.3.1 Introduction and Types of Guideways
	17-Nov-2023	1	5.2.3.2 Factors of design of guideways
	18-Nov-2023	1	5.2.4 Drives 5.2.4.1 Spindle drives 5.2.4.2 Feed drive 5.2.5 Spindle and Spindle Bearings

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	20-Nov-2023	1	6.0 ROBOTICS 6.1 Definition, Function and laws of robotics
17TH		1	6.0 ROBOTICS 6.1 Definition, Function and laws of robotics 6.2 Types of industrial robots 6.3 Robotic systems 6.4 Advantages and disadvantages of robots CLASS TEST-03
	22-Nov-2023		
	24-Nov-2023	1	REVISION
18TH	30-Nov-2023	1	REVISION