

**BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF MECHANICAL ENGINEERING**



LESSON PLAN

SUBJECT: MECHATRONICS (TH 4)

FACULTY: Er. CHIRANJEEVI PATTNAIK

ACCADEMIC SESSION: 2022-23

SEMESTER: 5TH

SEC: B

Sd/-
PTGF (MECH. Engg.)

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Discipline: Mechanical Engineering	Semester: 5th A		Name of the teaching faculty: Er. CHIRANJEEVI PATNAIK
Subject: Mechatronics	No. of Days/ per week class allotted: 04 periods per week Tue-1 period, Thu-1 period, Fri-1 period, Sat -1 period)		Semester From Date: 15-09-2022 To Date: 22-12-2022 No. of weeks: 14 weeks
Week	Class Day	No of period available	Theory Topics
1ST	15/09/2022	1	5.1 Introduction to Numerical Control of machines and CAD/CAM
	16/09/2022	1	5.1.1 NC machines
2ND	19/09/2022	1	5.1.2 CNC machines
	21/09/2022	1	5.1.3.1 CAD
	22/09/2022	1	5.1.3.2 CAM
	23/09/2022	1	5.1.3.4 Functioning of CAD/CAM system
3RD	26/09/2022	1	5.1.3.4 Features and characteristics of CAD/CAM system
	28/09/2022	1	5.1.3.5 Application areas for CAD/CAM
	29/09/2022	1	5.2 Elements of CNC machines 5.2.1 Introduction
	30/09/2022	1	5.2.2 Machine Structure
4TH	10/10/2022	1	5.2.3 Guideways/Slide ways

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4TH	13/10/2022	1	5.2.3.1 Introduction and Types of Guideways 5.2.3.2 Factors of design of guideways
	14/10/2022	1	5.2.4 Drives 5.2.4.1 Spindle drives 5.2.4.2 Feed drive
	15/10/2022	1	5.2.5 Spindle and Spindle Bearings Class test-01
5TH	17/10/2022	1	6.0 ROBOTICS 6.1 Definition, Function and laws of robotics
	19/10/2022	1	6.2 Types of industrial robots
	20/10/2022	1	6.3 Robotic systems
	21/10/2022	1	6.4 Advantages and Disadvantages of robots
6TH	26/10/2022	1	1.0 INTRODUCTION TO MECHATRONICS 1.1 Definition of Mechatronics
	27/10/2022	1	1.2 Advantages & disadvantages of Mechatronics.
	28/10/2022	1	1.3 Application of Mechatronics

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7TH	31/10/2022	1	1.4 Scope of Mechatronics in Industrial Sector
	02/11/2022	1	1.5 Components of a Mechatronics System
	03/11/2022	1	1.6 Importance of mechatronics in automation
	04/11/2022	1	2.0 SENSORS AND TRANSDUCERS 2.1 Definition of Transducers 2.2 Classification of Transducers
8TH	07/11/2022	1	Class test-02
	09/11/2022	1	2.3 Electromechanical Transducers 2.4 Transducers Actuating Mechanisms
	10/11/2022	1	2.3 Electromechanical Transducers 2.4 Transducers Actuating Mechanisms
	11/11/2022)	1	2.5 Displacement & Positions Sensors
9TH	14/11/2022	1	2.6 Velocity, motion, force and pressure sensors.
	16/11/2022	1	2.7 Temperature and light sensors
	17/11/2022	1	Internal examination
10TH	18/11/2022	1	Internal examination

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	21/11/2022	1	3.0 ACTUATORS-MECHANICAL,ELECTRICAL 3.1Mechanical Actuators 3.1.1 Machine, Kinematic Link,Kinematic Pair
	23/11/2022)	1	3.1.2 Mechanism, Slider crank Mechanism
	24/11/2022	1	3.1.3 Gear Drive, Spur gear, Bevel gear,Helical gear, worm gear
	25/11/2022	1	3.1.4 Belt & Belt drive 3.1.5 Bearings
	28/11/2022	1	Class test-03
11TH	30/11/2022	1	3.2 Electrical Actuator 3.2.1 Switches and relay
	01/12/2022	1	3.2.2Solenoid.
	02/12/2022		3.2.3 D.C Motors 3.2.4 A.C Motors
12TH	05/12/2022	1	3.2.5 Stepper Motors .
	07/12/2022	1	3.2.6 Specification and control ofstepper motors
	08/12/2022	1	3.2.7 Servo Motors D.C & A.C

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	09/12/2022	1	4.0 PROGRAMMABLE LOGIC CONTROLLERS(PLC) 4.1 Introduction
	12/12/2022	1	4.2 Advantages of PLC 4.3 Selection and uses of PLC
13TH	14/12/2022	1	4.4 Architecture basic internalstructures
	15/12/2022	1	4.5 Input/output Processing andProgramming

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	16/12/2022	1	4.6 Mnemonics 4.7 Master and Jump Controllers
	19/12/2022	1	REVISION
14TH	21/12/2022	1	REVISION
	22/12/2022	1	REVISION