

LESSON PLAN

DEPARTMENT OF MECHANICAL ENGINEERING, GOVT. POLYTECHNIC BHADRK

SUBJECT:- MECHATRONICS

SUBJECT CODE:- TH-4

TOTAL PERIOD:- 60 Period

NAME OF THE FACULTY: - SANTANU KUMAR DUTTA (Workshop Superintendent) Theory:- 4p/week

ACADEMIC YEAR :2022-23

SEMESTER:- 5th

SEM STARTS FROM DATE: 15/09/2022 TO DATE 22/12/2022

NUMBER OF WEEKS:15

MONTH	WEEK	DATE/ PERIOD	Syllabus to be covered
SEPTEMBER	3 RD	15.09.22/1p	1.0 INTRODUCTION TO MECHATRONICS 1.1 Definition of Mechatronics
		17.09.22/1p	1.2 Advantages & disadvantages of Mechatronics 1.3 Application of Mechatronics
		20.09.2022/ 1p	1.4 Scope of Mechatronics in Industrial Sector
	4 TH	21.09.2022	1.5 Components of a Mechatronics System
		22.09.2022/ 1p	1.6 Importance of mechatronics in automation
		24.09.22/1p	2.0 SENSORS AND TRANSDUCERS
		5 TH	27.09.22/1p
	28.09.22/1p		2.2 Classification of Transducers
	29.09.22/1p		2.3 Electromechanical Transducers
OCTOBER	1 ST	01.10.22/1p	CONTINUED...
	3 RD	11.10.22/1p	2.4 Transducers Actuating Mechanisms
		12.10.22/1p	2.5 Displacement & Positions Sensors
		13.10.22/1p	2.6 Velocity, motion, force and pressure sensors.
		15.10.22/1p	2.7 Temperature and light sensors.
	4 TH	18.10.22/1p	CONTINUED...
		19.10.22/1p	3.0 ACTUATORS-MECHANICAL, ELECTRICAL 3.1 Mechanical Actuators
		20.10.22/1p	3.1.1 Machine, Kinematic Link, Kinematic Pair 3.1.2 Mechanism, Slider crank Mechanism
	5 TH	25.10.22/1p	3.1.3 Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear 3.1.4 Belt & Belt drive
		26.10.22/1p	3.1.5 Bearings
		27.10.22/1p	3.2 Electrical Actuator
		29.10.22/1p	3.2.1 Switches and relay
			3.2.2 Solenoid
NOVEMBER	1 ST	01.11.22/1p	3.2.3 D.C Motors
		2.11.22/1p	3.2.4 A.C Motors
		3.11.22/1p	3.2.5 Stepper Motors
			3.2.6 Specification and control of stepper motors
		5.11.22/1p	3.2.7 Servo Motors D.C & A.C
	2 ND	09.11.22/1p	4.0 PROGRAMMABLE LOGIC CONTROLLERS(PLC) 4.1 Introduction
		10.11.22/1p	CONTINUED...
		12.11.22/1p	4.2 Advantages of PLC
	3 RD	15.11.22/1p	CONTINUED...
		16.11.22/1p	4.3 Selection and uses of PLC
		17.11.22/1p	CONTINUED...
		19.11.22/1p	4.4 Architecture basic internal structures
	4 TH	22.11.22/1p	CONTINUED...
		23.11.22/1p	4.5 Input/output Processing and Programming
		24.11.22/1p	CONTINUED...
		26.11.22/1p	CONTINUED...
	5 TH	29.11.22/1p	4.6 Mnemonics
		30.11.22/1p	CONTINUED...

DECEMBER	1 ST	1.12.22/1p	4.7 Master and Jump Controllers
		03.12.22/1p	CONTINUED...
	2 ND	06.12.22/1p	5.0 ELEMENTS OF CNC MACHINES 5.1 Introduction to Numerical Control of machines and CAD/CAM
		07.12.22/1p	5.1.1 NC machines
		08.12.22/1p	5.1.2 CNC machines
		10.12.22/1p	5.1.3. CAD/CAM 5.1.3.1 CAD 5.1.3.2 CAM
	3 RD	13.12.22/1p	CONTINUED...
		14.12.22/1p	5.1.3.3 Software and hardware for CAD/CAM
		15.12.22/1p	5.1.3.4 Functioning of CAD/CAM system
		17.12.22/1p	5.1.3.4 Features and characteristics of CAD/CAM system
	4 TH	20.12.22/1p	5.1.3.5 Application areas for CAD/CAM
		21.12.22/1p	5.2 elements of CNC machines 5.2.1 Introduction
		22.12.22/1p	5.2.2 Machine Structure
		24.12.22/1p	5.2.3 Guideways/Slide ways
		Extra Class	5.2.3.1 Introduction and Types of Guideways 5.2.3.2 Factors of design of guideways
		Extra Class	5.2.4 Drives 5.2.4.1 Spindle drives 5.2.4.2 Feed drive
	Extra Class	5.2.5 Spindle and Spindle Bearings	
	Extra Class	6.0 ROBOTICS	