

C. V. RAMAN POLYTECHNIC, BHUBANESWAR

LESSON PLAN Session (2025-2026)

Discipline: Mechanical Engineering	Semester: 5 th Semester, Winter/2025	Name of the Faculty: Dr. Brundaban Sahoo, Asst.Prof Email ID: brundaban.sahoo@cvrp.edu.in
Subject: Mechatronics, Theory-4	No. of Days/week: 04	Start Date: 14/07/2025 End Date: 15/11/2025

Week	Class Day	Theory Topics
1st	1st	Definition of Mechatronics, Advantages & disadvantages of Mechatronics.
	2nd	Application of Mechatronics.
	3rd	Scope of Mechatronics in Industrial Sector
	4th	Components of a Mechatronics System.
2nd	1st	Importance of mechatronics in automation.
	2nd	Revision, Previous year question Discussion.
	3rd	Defination of Transducers, Classification of Transducers.
	4th	Electromechanical Transducers,, Transducers Actuating Mechanisms
3rd	1st	Displacement & Positions Sensors,
	2nd	Velocity, motion, force and pressure sensors.
	3rd	Temperature and light sensors.
	4th	Revision, Previous year question Discussion.
4th	1st	Actuators-Mechanical, Electrical.
	2nd	Mechanical Actuators, Machine.
	3rd	Kinematic Link, Kinematic Pair, Mechanism.
	4th	Slider crank Mechanism
5th	1st	Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear.
	2nd	Belt & Belt drive, Bearings
	3rd	Electrical Actuator, Switches and relay,
	4th	Solenoid working Principle.
6th	1st	D.C Motors, A.C Motors working principle.

	2nd	Stepper Motors, Specification and control of stepper motors
	3rd	Servo Motors D.C & A.C
	4th	Differentiate between AC & DC.
	1st	Differentiate between Servo & Stepper.
7th	2nd	Revision, Previous year question Discussion.
	3rd	Quiz Test.
	4th	Programmable Logic Controllers(PLC), Introduction,
8th	1st	Advantages of PLC.
	2nd	Selection and uses of PLC
	3rd	Architecture basic internal structures.
	4th	Input/output Processing.
9th	1st	Input/output Processing and Programming.
	2nd	Mnemonics definition & application
	3rd	Master and Jump Controllers
	4th	Revision, Previous year question Discussion.
10th	1st	Quiz Test.
	2nd	Elements Of CNC Machines.
	3rd	Introduction to Numerical Control of machines and CAD/CAM.
	4th	NC machines, CNC machines,
11th	1st	CAD/CAM, CAD, CAM
	2nd	Software for CAD/CAM.
	3rd	Hardware for CAD/CAM.
	4th	Functioning of CAD/CAM system.
12th	1st	Features and characteristics of CAD/CAM system,
	2nd	Application areas for CAD/CAM.
	3rd	Elements of CNC machines
	4th	CNC Introduction, Machine Structure.
13th	1st	Guideways/Slide ways,
	2nd	Introduction and Types of Guideways, Factors of design of guideways.
	3rd	Revision, Previous year question Discussion.
	4th	Drives, Spindle drives.
14th	1st	Feed drive.
	2nd	Spindle and Spindle Bearings
	3rd	Robotics, Definition, Function and laws of robotics
	4th	Types of industrial robots
15th	1st	Robotic systems, SCARA.
	2nd	Advantages and Disadvantages of robots
	3rd	Revision, Previous year question Discussion.
	4th	Revision, Previous year question Discussion.


Signature of Faculty


Signature of HOD