

GOVERNMENT CO.ED POLYTECHNIC RAIPUR (C.G)

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN

Session: NOV-DEC 2024

Session start as per university calendar:

Course Name: Instrumentation & Process Control

Name of Subject Teacher: - Deepak Patel

Lecturer plan T+P = 4

Course code: 2024573(025)

Discipline: EE		Semester: 5th		Class room Instruction Start Date: 29/09/2022				
Chapter No.	Topics	Sub Topic to be covered under this unit	Total hours	No. of periods planned	Actual No of periods taken	Date of Class Conduction	Use of AV resources if any	Remarks if any
1	Basic Instrumentation System and characteristics	Need of Instrumentation.	12	3	2	3/9/24 4/09/24	NA	
		Block diagram of a generalized instrumentation system and their functions		3	2	9/09/24 10/09/24		
		Characteristics of an Instrumentation system		3	2	11/09/24 12/09/24		
		Static characteristics - Accuracy, precision, error, resolution, linearity, reproducibility,		3	2	13/09/24 14/09/24		
2	Transducers	Concepts, importance and characteristics	20	5	3	17/09/24 18/09/24	NA	
		Sensors and transducers.		5	2	20/09/24 21/09/24		
		Classification of transducers based on: Energy - Active and passive. Technology Mechanical, Electrical, Electronic.		5	4	23/09/24 24/09/24 26/09/24 27/09/24		30/09/24 Doubt class
		Construction, Bourdon tube LVDT Strain Gauge Thermocouple, Resistance Temperature Detector(RTD), Thermistor		5	3	1/10/24 3/10/24 8/10/24		
3	Signal conditioning and data transmission	Signal conditioning- Purpose, Elements	16	4	2	9/10/24 14/10/24	NA	
		Operational Amplifier, instrumentation Amplifier, Applications.		4	4	16/10/24 18/10/24		
		Sample and Hold of a signal, Shannon criteria, Quantization		4	2	21/10/24 22/10/24		
		Data transmission- Advantages and disadvantages of Digital Transmission over Analog		4	3	23/10/24 24/10/24 25/10/24		
4	Measurement of Non-Electrical quantities	Measurement of Temperature- using Thermocouple, RTD	14	1	1	04/11/24	NA	
		Measurement of Pressure using Pirani Gauge, LVDT		1	1	05/11/24		
		Measurement of speed - using Tachometer, Stroboscope		1	1	06/11/24		
		Material Analysis- Measurement of pH, Humidity,		1	1	08/11/24		
		Measurement of Flow - using electromagnetic pick-up, turbine flow meter.		1	1	11/11/24		
		Measurement of position, object detection using proximity transducers		1	1	18/11/24		
		Measurement of liquid level - using capacitive transducer.		1	1	18/11/24		

