Name of the Faculty : **Sh. Ravinder Kumar**
Discipline : **Electronics and Communication Engg.**
Semester : **Vth**
Subject : **Instrumentation**
Lesson Plan Duration : **04.08.2025 to 26.11.2025**
Work Load (Lecture/ Practical) per week (in hours): 03 HOURS (Lecture)

Week	Theory		Practical
	Lecture day	Topic (including assignment/ test)	Topic
1st	1	Introduction about subject	Introduction about Practical
	2	Measurements: Importance of measurement, basic measuring systems	
	3	advantages and limitations of each measuring systems	
2nd	4	display devices	Draw the characteristics of a potentiometer
	5	Theory of Transducers: construction and use of various transducers	
	6	Different types of transducers	
3rd	7	Resistive transducers and wire wound potentiometer	Study of variable capacitive transducer
	8	capacitive transducers	
	9	Inductive transducers	
4th	10	Electromagnetic transducers	To measure linear displacement using LVDT
	11	Piezo electric type transducers	
	12	Measurement of Displacement and Strain: LVDT and RVDT transducers	
5th	13	**1st Sessional Test**	To study the use of electrical strain gauge
	14	Strain gauges and Gauge factor	
	15	Gauge materials and their selections.	
6th	16	Use of electrical strain gauges their different types such as inductance type resistive type, wire and foil type etc.	To study weighing machine using load cell
	17	Strain gauge bridges and amplifiers, Proximity switches.	
	18	Force Measurement: Different types of force measuring devices and their principles	
7th	19	Load cells	To measure the speed of a motor.
	20	load measurements by using elastic transducers and electrical strain gauges	

	21	Pneumatic and Hydraulic Load cells	
8th	**22**	Torque Measurement: Different types of torque measurement methods	Use of different proximity Switches.
	23	Speed measurements; different methods and devices.	
	24	Speed measurements; different methods and devices.	
9th	**25**	Pressure Measurement	Use of magnetic and ultrasonic flow meters.
	26	Bourdon pressure gauges	
	27	electrical pressure pickups and their principle construction and applications	
10th	**28**	Low pressure measurements	Revision
	29	Use of pressure cells.	
	30	**2nd Sessional Test**	
11th	**31**	Flow Measurement: Different type of flow meters	Use of thermistor as ON/OFF switch
	32	Basic principles of magnetic flow meters	
	33	ultrasonic flow meters	
12th	**34**	Measurement of Temperature: Bimetallic thermometer	To measure temperature using RTD.
	35	resistance thermometers	
	36	Thermisters	
13th	**37**	Thermocouple	To measure temperature using a thermo-couple
	38	Pyrometer	
	39	Temperature recorders	
14th	**40**	Measurement of other non electrical quantities such as humidity measurements	To measure pH value of given solution.
	41	Different Hygrometers	
	42	pH value measurements	
15th	**43**	Level measurements	To measure level of water in a tank using any sensor
	44	vibrations measurements	
	45	**3rd Sessional Test**	