

Name of the Faculty : **Sh. Ravinder Kumar**
Discipline : **Electronics and Communication Engg.**
Semester : **5th**
Subject : **Instrumentation**
Lesson Plan Duration : **20 Aug to 29 Nov 2024**
Work Load (Lecture/ Practical) per week (in hours): 03 HOURS (Lecture)

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

8 th	22	measurements of torque by brake and dynamometer	Use of different proximity Switches.
	23	Speed measurements; different methods and devices.	
	24	Speed measurements; different methods and devices.	
9 th	25	Pressure Measurement	Use of magnetic and ultrasonic flow meters.
	26	Bourdon pressure gauges	
	27	electrical pressure pickups and their principle construction and applications	
10 th	28	Low pressure measurements	Revision
	29	Use of pressure cells.	
	30	2nd Sessional Test	
11 th	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	
12 th	34	Measurement of Temperature: Bimetallic thermometer	To measure temperature using RTD.
	35	resistance thermometers	
	36	Thermistors	
13 th	37	Thermocouple	To measure temperature using a thermo-couple
	38	Pyrometer	
	39	Temperature recorders	
14 th	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	
15 th	43	Level measurements	To measure level of water in a tank using any sensor
	44	vibrations measurements	
	45	3rd Sessional Test	