

Lesson Plan

Name of the Faculty : Smt Sumitra Sangwan
Discipline : Electronics and Communication Engg.
Semester : 5th Semester
Subject : Instrumentation
Lesson Plan Duration : July- November 2019
Work Load (Lecture/ Practical) per week (in hours): 03 HOURS (Lecture)03 Hours per Group (PRACTICAL)

Week	Theory		Practical
	Lecture No	Topic (including assignment/ test)	Topic
1 st	1st Lecture	Introduction about subject	Introduction about Practical Instrumentation
	2nd Lecture	UNIT 1: Measurements: Importance of measurement, basic measuring systems.	
	3rd Lecture	Advantages and limitations of each measuring system.	
2 nd	1st Lecture	Display devices	To measure temperature using a thermo-couple
	2nd Lecture	UNIT 2: Theory of Transducers: construction and use of various transducers	
	3rd Lecture	Resistive transducers and wire wound potentiometer.	
3 rd	1st Lecture	Capacitive transducers	To measure temperature using a thermo-couple
	2nd Lecture	Inductive transducers	
	3rd Lecture	Electromagnetic, piezo electric type transducer.	
4 th	1st Lecture	UNIT 3: Measurement of Displacement and Strain: LVDT and RVDT transducer.	Study and use of digital temperature controller
	2nd Lecture	Strain gauges and Gauge factor, gauge materials and their selections.	
	3rd Lecture	Use of electrical strain gauges their different types such as inductance type resistive type, wire and foil type etc.	
5 th	1st Lecture	Strain gauge bridges and amplifiers.	Use of themistor in ON/OFF transducer
	2nd Lecture	Class Test 1	
	3rd Lecture	Revision	
6 th	1st Lecture	1st Sessional Test	Study of variable capacitive transducer
	2nd Lecture	UNIT 4: Force Measurement: Different types of force measuring devices and their principles	
	3rd Lecture	Load cells	
7 th	1st Lecture	load measurements by using elastic transducers and electrical strain gauges.	Draw the characteristics of a potentiometer
	2nd Lecture	Torque Measurement: Different types of torque measurement methods.	
	3rd Lecture	Measurements of torque by brake and dynamometer.	
8 th	1st Lecture	Speed measurements; different methods, devices.	To measure linear displacement using LVDT
	2nd Lecture	UNIT 5: Pressure Measurement	
	3rd Lecture	Bourdon pressure gauges	
9 th	1st Lecture	Electrical pressure pickups and their principle construction and applications.	To study the use of electrical strain
	2nd Lecture	Low pressure measurements and Use of pressure cells.	

	3rd Lecture	Class Test 2	gauge
10th	1st Lecture	Revision	To study weighing machine using load cell
	2nd Lecture	2nd Sessional Test	
	3rd Lecture	UNIT 6: Flow Measurement: Basic principles of magnetic flow meters.	
11th	1st Lecture	Ultrasonic flow meters	Revision & Viva
	2nd Lecture	UNIT 7: Measurement of Temperature: Bimetallic thermometer.	
	3rd Lecture	Resistance thermometers	
12th	1st Lecture	Thermistors	Revision & Viva
	2nd Lecture	Thermocouple	
	3rd Lecture	Pyrometer	
13th	1st Lecture	Temperature recorders	To study pH meter.
	2nd Lecture	Unit8: Measurement of other non electrical quantities such as humidity measurements.	
	3rd Lecture	pH value measurements	
14th	1st Lecture	Level measurements	Revision & Viva
	2nd Lecture	Vibrations measurements	
	3rd Lecture	Class Test 3	
15th	1st Lecture	Revision	Revision & Viva
	2nd Lecture	Revision	
	3rd Lecture	3rd Sessional Test	

* At least Three Assignment covering substantial portion of syllabus to be given.