

VAISH TECHNICAL INSTITUTE, ROHTAK
Lesson Plan

Name of the Faculty : Sanjay Tayal

Discipline : Electronics and Communication Engg.

Semester : IVth

Subject : Instrumentation

Lesson Plan Duration : Jan-Apr 2018

Work Load (Lecture/Practical) per week : 04 Theory Lectures and 03 Practical Lectures per Group

Week	Theory		Practical
	Lecture Day	Topic (including assignment/ test)	Topic
1 st	1	Introduction about subject	Introduction about Practical work of Instrumentation subject
	2	Measurements: measurement, Importance of measurement, basic measuring systems.	
	3	Types of measuring system and advantages and limitations of each measuring system.	
	4	Display devices	
2 nd	5	Revision	To measure the level of a liquid using a transducer
	6	Transducers: Definition , basic terms related with the transducers	
	7	Types of Transducer,	
	8	selection of transducer	
3 rd	9	construction and use of various transducers,Resistive transducers and wire wound potentiometer.	To measure temperature using a thermo-couple
	10	Capacitive transducers	
	11	Inductive transducers	
	12	Electromagnetic,	
4 th	13	piezo electric type transducer.	Study and use of digital temperature controller
	14	Revision	
	15	Revision	
	16	Measurement of Displacement and Strain: LVDT and RVDT transducer.	
5 th	17	Strain, Strain gauges and their Types.	Use of themistor in ON/OFF transducer
	18	Use of electrical strain gauges and their different types such as inductance type, resistive type etc.	
	19	Gauge factor,	
	20	gauge materials and their selections.	
6 th	21	Types of electrical resistive strain gauge like wire and foil type etc., semiconductor strain gauge	Study of variable capacitive transducer
	22	Strain gauge bridges and amplifiers.	
	23	Revision	
	24	Revision	
7 th	25	Revision	Draw the characteristics of a potentiometer
	26	1st Sessional Test	
	27	Force Measurement: Different types of force measuring devices and their principles	
	28	Load cells	

8 th	29	load measurements by using elastic transducers and electrical strain gauges	To measure linear displacement using LVDT
	30	Revision	
	31	Torque Measurement: Different types of torque measurement methods.	
	32	Measurements of torque by brake and dynamometer.	
9 th	33	Revision	To study the use of electrical strain gauge
	34	Speed measurements: different methods for measurement of linear and angular speed	
	35	Revision	
	36	Pressure Measurement: pressure, Electrical pressure pickups and their principle construction and applications	
10 th	37	Bourdon pressure gauges	To study weighing machine using load cell
	38	Low pressure measurements and Use of pressure cells.	
	39	Revision	
	40	2nd Sessional Test	
11 th	41	Flow Measurement: Basic principles of magnetic flow meters.	To study pH meter.
	42	Ultrasonic flow meters	
	43	Revision	
	44	Measurement of Temperature: definition, different temp. measurement scales, Bimetallic thermometer.	
12 th	45	Thermoelectric thermometers: RTD	Revision & Viva
	46	Thermistors	
	47	Thermocouple	
	48	Pyrometers	
13 th	49	Temperature recorders	Revision & Viva
	50	Revision	
	51	Revision	
	52	Measurement of other non electrical quantities such as linear and angular displacement measurement	
14 th	53	humidity measurement	Revision & Viva
	54	pH value measurement	
	55	Level measurements	
	56	Vibrations measurement	
15 th	57	Revision	Revision & Viva
	58	Revision	
	59	Revision	
	60	3rd Sessional Test	