Name of the Faculty : Sh.Naveen Partap Singh

Discipline : ElectronicsandCommunicationEngg.

Semester : Vth

Subject : Instrumentation

Lesson Plan Duration : 04.08.2025 to 26.11.2025 WorkLoad(Lecture/Practical)perweek(inhours): 03HOURS(Lecture)

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| **Week** | **Theory** | **Practical** |
| **Lecture day** | **Topic(including/assignment/test)** | **Topic** |
| **1st** | **1** | Introductionaboutsubject | Introductionabout Practical |
| **2** | Measurements:Importanceofmeasurement,basicmeasuring systems |
| **3** | advantagesandlimitationsofeachmeasuringsystems |
| **2nd** | **4** | displaydevices | Draw the characteristicsofa potentiometer |
| **5** | TheoryofTransducers:constructionanduseofvarious transducers |
| **6** | Differenttypesoftransducers |
| **3rd** | **7** | Resistivetransducersandwirewoundpotentiometer | Studyofvariable capacitive transducer |
| **8** | capacitivetransducers |
| **9** | Inductivetransducers |
| **4th** | **10** | Electromagnetictransducers | To measure linear displacementusing LVDT |
| **11** | Piezoelectrictypetransducers |
| **12** | MeasurementofDisplacementandStrain:LVDTandRVDT transducers |
| **5th** | **13** | **1stSessionalTest** | Tostudytheuseof electrical strain gauge |
| **14** | StraingaugesandGaugefactor |
| **15** | Gaugematerialsandtheirselections. |
| **6th** | **16** | Useofelectricalstraingaugestheirdifferenttypessuchas inductance typeresistive type, wire and foil type etc. | To study weighing machineusingload cell |
| **17** | Straingaugebridgesandamplifiers,Proximityswitches. |
| **18** | ForceMeasurement:Differenttypesofforcemeasuringdevices and their principles |
| **7th** | **19** | Loadcells | To measure the speedofamotor. |
| **20** | loadmeasurementsbyusingelastictransducersandelectrical strain gauges |

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|  | **21** | PneumaticandHydraulicLoadcells |  |
| **8th** | **22** | TorqueMeasurement:Differenttypesoftorquemeasurement methods | Use of different proximitySwitches. |
| **23** | Speedmeasurements;differentmethodsanddevices. |
| **24** | Speedmeasurements;differentmethodsanddevices. |
| **9th** | **25** | PressureMeasurement | Useofmagneticand ultrasonic flow meters. |
| **26** | Bourdonpressuregauges |
| **27** | electricalpressurepickupsandtheirprincipleconstructionand applications |
| **10th** | **28** | Lowpressuremeasurements | Revision |
| **29** | Useofpressurecells. |
| **30** | **2ndSessionalTest** |
| **11th** | **31** | FlowMeasurement:Differenttypeofflowmeters | Useofthermistoras ON/OFF switch |
| **32** | Basicprinciplesofmagneticflowmeters |
| **33** | ultrasonicflowmeters |
| **12th** | **34** | MeasurementofTemperature:Bimetallicthermometer | To measure temperatureusing RTD. |
| **35** | resistancethermometers |
| **36** | Thermisters |
| **13th** | **37** | Thermocouple | To measure temperatureusinga thermo-couple |
| **38** | Pyrometer |
| **39** | Temperaturerecorders |
| **14th** | **40** | Measurementofothernonelectricalquantitiessuchashumidity measurements | TomeasurepH value of given solution. |
| **41** | DifferentHygrometers |
| **42** | pHvalue measurements |
| **15th** | **43** | Levelmeasurements | Tomeasurelevelof water in a tank using any sensor |
| **44** | vibrationsmeasurements |
| **45** | **3rdSessionalTest** |