**LESSION PLAN**

**NAME OF THE FACULTY** : - HIMANSHU YADAV

**DISCIPLINE** : - ECE

**SEMESTER** : - FOURTH

**SUBJECT** : - INST.

**LESSON PLAN DURATION** : - 15 weeks (from JULY 2019 to DEC. 2019)

WORK LOAD (LECTURE/PRACTICAL) PER WEEK (IN HOURS):- LECTURE-**03**, PRACTIACL-**03**

|  |  |  |
| --- | --- | --- |
| **WEEK** | **THEORY** | **PRACTICAL** |
| **LECTURE DAY** | **TOPIC****(including assignment/test)** | **PRACTICAL DAY** | **TOPIC** |
| 1st | 1st | Importance of measurement | 1stGroup-1 | To measure the level of a liquid using a transducer |
| 2nd | basic measuring systems |  |  |
| 3rd | Advantages and limitations of eachmeasuring systems and display devices* **assignments**
 | 2ndGroup-2 | To measure the level of a liquid using a transducer |
| 2nd | 4th | Transducers:Theory, construction | 3rdGroup-1 | To measure temperature using a thermo-couple |
| 5th | use of various transducers(resistance type) |  |  |
| 6th | use of various transducers(inductance type) | 4thGroup-2 | To measure temperature using a thermo-couple |
| 3rd | 7th | use of various transducers(capacitance type), | 5thGroup-1 | Study and use of digital temperature controller |
| 8th | use of various transducers(electromagnetic type) |  |  |
| 9th | use of various transducers(piezo electric type)* **assignments**
 | 6thGroup-2 | Study and use of digital temperature controller |
| 4th | 10th | Displacement Measuring Devices: wire wound potentiometer | 7thGroup-1 | Use of thermistor in ON/OFF transducer |
| 11th | LVDT, |  |  |
| 12th | strain gauges and theirdifferent types such as inductance type, resistive type, wire and foil type etc. | 8thGroup-2 | Use of thermistor in ON/OFF transducer, |
| 5th | 13th | Gauge factor,Gauge materials and their selections. | 9thGroup-1 | Study of variable capacitive transducer |
| 14th | Use of electrical strain gauges |  |  |
| 15th | Strain gauge bridges andamplifiers.* **assignments**
 | 10thGroup-2 | Study of variable capacitive transducer |
| 6th | 16th | Different types of force measuring devices and their principles | 11thGroup-1 | Draw the characteristics of a potentiometer |
| 17th | load measurements by usingelastic transducers |  |  |
| 18th | load measurements by usingelastic transducers and electrical strain gauges. | 12thGroup-2 | Draw the characteristics of a potentiometer |
| 7th | 19th | Load cells | 13thGroup-1 | To measure linear displacement using LVDT |
| 20th | measurements of torque by brake,dynamometer, electrical strain gauges, |  |  |
| 21th | Speed measurements; different methods, devices. | 14thGroup-1 | To measure linear displacement using LVDT |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 8th | 22th | * **assignments**
* **Class Test**
 | 15thGroup-1 | **Revision** |
| 23th | Pressure Measurement:Bourdon pressure gauges, |  |  |
| 24th | electrical pressure pick-ups and their principle, construction and application | 16thGroup-2 | **Revision** |
| 9th | 25th | electrical pressure pick-ups and their principle,construction and application | 17thGroup-1 | To study the use of electrical strain gauge |
| 26th | Use of pressure cells* **assignments**
 |  |  |
| 27th | Flow Measurement: introduction | 18thGroup-2 | To study the use of electrical strain gauge |
| 10th | 28th | Basic principles of magnetic flow meters | 19thGroup-1 | To study weighing machine using load cell |
| 29th | Basic principles of ultrasonic flow meters |  |  |
| 30th | * **assignments**
* **Class Test**
 | 20thGroup-2 | To study weighing machine using load cell |
| 11th | 31th | Measurement of Temperature: introduction | 21thGroup-1 | To study pH meter. |
| 32th | Bimetallic thermometer |  |  |
| 33th | Thermoelectric thermometers | 22thGroup-2 | To study pH meter. |
| 12th | 34th | Resistance thermometers | 23thGroup-1 | **Revision** |
| 35th | Thermocouple |  |  |
| 36th | Thermistors | 24thGroup-2 | **Revision** |
| 13th | 37th | Pyrometer. | 25thGroup-1 | **Test** |
| 38th | Temperature recorders* **assignments**
 |  |  |
| 39th | Measurement of other non-electrical quantities :- introduction | 26thGroup-2 | **Test** |
| 14th | 40th | Humidity | 27thGroup-1 | **Revision** |
| 41th | pH level |  |  |
| 42th | Vibrations | 28thGroup-2 | **Revision** |
| 15th | 43th | * **assignments**
* **Class Test**
 | 29thGroup-1 | **Revision** |
| 44th | * **Class Test**
 |  |  |
| 45th | * **Class Test**
 | 30thGroup-2 | **Revision** |