**Govt. Polytechnic Nilokheri**

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|  **Lesson Plan** |
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| **Name of the faculty:** | Sh. Rajesh Chopra |  |  |  |  |  |  |
| **Discipline :** | Electrical Engg. |  |  |  |  |  |  |  |
| **Semester :** | 5th |  |  |  |  |  |  |
| **Subject :** | Instrumentation |  |  |  |  |  |  |  |
| **Lesson Plan Duration :**  15 weeks (from September 2020 to December 2020) |  |  |  |  |
| **Work Load (L/P):-** Lectures-04, Practical-02 |  |  |  |  |
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| **Week** | **Day** | **Topic(including assignment test)** | **Practical day**  | **Topic** |
|
| 1st | 1 | Importance of measurement, basic measuring system | 1 | Revision of Theory class |
| 2 | Advantages & limitation of each measuring system and display devices |
| 3 | Theory, construction & use of various transducers resistance ,inductance, |
| 4 | Theory, construction & use of various transducers inductance, class test |
| 2nd | 5 | Theory, construction & use of various transducers capacitance, electromagnetic | 2 | To measure the level of a liquid using a transducer |
| 6 | Theory, construction & use of various transducers piezo electric type |
| 7 | Wire wound potentiometer, LVDT |
| 8 | Revision and class test |
| 3rd | 9 | Strain Gauges & their different types such as inductance type | 3 | To Measure temperature using a thermo-couple |
| 10 | Resistive type ,wire & foil type etc. |
| 11 | Gauge factor gauge materials & their selections |
| 12 | Revision and class test |
| 4th | 13 | Use of electrical strain gauges, strain gauge bridges & amplifiers | 4 | Study and use of digital temperature controller |
| 14 | Different types of force measuring devices & their Principles |
| 15 | Revision and class test |
| 16 | Load measurements by using elastic transducers & electrical strain gauges |
| 5th | 17 | Load cells, measurements of torque by brake, dynamometer | 5 | Viva & Discursion  |
| 18 | Electrical strain gauges, speed measurements |
| 19 | Load measurements by using electrical strain gauges |
| 20 | Different methods, devices |
| 6th | 21 | Class Test of Unit 1&2 | 6 | Use of thermistor in ON/OFF transducer |
| 22 | Viva & Discursion  |
| 23 | Revision and class test |
| 24 | Class Test of Unit 3&4 |
| 7th | 25 | Viva & Discursion  | 7 | Study of variable capacitive transducer |
| 26 | Bourdon Pressure gauges |
| 27 | Revision and class test |
| 28 | Electrical pressure pickups & their Principle |
| 8th | 29 | Construction & applications. Use of pressure cells. | 8 | Draw the characteristics of a potentiometer |
| 30 | Class test of Unit 5 |
| 31 | Revision and class test |
| 32 | Viva & Discursion  |
| 9th | 33 | Basic Principles of magnetic & ultrasonic flow meters | 9 | Viva & Discursion  |
| 34 | Class test of Unit 6 |
| 35 | Revision and class test |
| 36 | Viva & Discursion  |
| 10th | 37 | Bimetallic thermometer | 10 | To measure liner displacement using LVDT |
| 38 | Thermoelectric thermometers |
| 39 | Revision and class test |
| 40 | Resistance thermometers |
| 11th | 41 | Thermocouple | 11 | To study the use of electrical strain gauge |
| 42 | Thermisters |
| 43 | Revision and class test |
| 44 | Pyrometer |
| 12th | 45 | Temperature recorders | 12 | To study weighing machine using load cell |
| 46 | Class test of Unit 7 |
| 47 | Revision and class test |
| 48 | Viva & Discursion  |
| 13th | 49 | Measurement of other non electrical quantities such as humidity | 13 | Viva & Discursion  |
| 50 | Measurement of other non electrical quantities such as PH |
| 51 | Revision and class test |
| 52 | Measurement of other non electrical quantities such as level |
| 14th | 53 | Measurement of other non electrical quantities such as vibrations | 14 | To study PH meter |
| 54 | Class test of Unit 8 |
| 55 | Revision and class test |
| 56 | Viva & Distortion  |
| 15th | 57 | Revision of Unit1,2,&3 | 15 | Viva & Discursion  |
| 58 | Revision of Unit 4,5 |
| 59 | Revision and class test |
| 60 | Revision of Unit 6,7,&8 |