Lesson Plan

Name of faculty : Ruby Sathiala

Discipline : Electrical Engineering

Semester : 7th

Subject : Transducers & their applications (ET-419-E)

Lesson plan duration : 15 weeks

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| **Theory** | | | | | |
| **Week** | **Lecture** | **Topic (Including Assignment / Test) : Planned** | **Actually covered on (date)** | | |
|  |  |  | **Date** | **HOD Sign.** | **Director-Principal** |
| 1st | 1 | Introduction to the syllabus, Definition of transducer |  |  |  |
| 2 | Advantages of an electrical signal as output |  |  |  |
| 3 | Basic requirements of transducers |  |  |  |
| 4 | Primary and Secondary transducers |  |  |  |
| 2nd | 5 | Analog and digital transducers |  |  |  |
| 6 | Resistive transducers |  |  |  |
| 7 | Inductive transducers |  |  |  |
| 8 | Capacitive transducers |  |  |  |
| 3rd | 9 | Piezoelectric transducers & Hall effect transducers |  |  |  |
| 10 | Photoelectric transducers |  |  |  |
| 11 | Revision of 1st unit |  |  |  |
| 12 | Measurement of Displacement - Potentiometric resistance type transducers |  |  |  |
| 4th | 13 | Inductive type transducers, Differential transformer (L.V.D.T) |  |  |  |
| 14 | Capacitive transducers |  |  |  |
| 15 | Hall effect devices, Strain gauge transducers |  |  |  |
| 16 | Measurement of Velocity: Variable reluctance pick up, Electromagnetic tachometers |  |  |  |
| 5th | 17 | Photoelectric tachometer, Toothed rotor tachometer generator |  |  |  |
| 18 | Measurement of Flow: Venturi meter |  |  |  |
| 19 | Orifice meter, Nozzle meter |  |  |  |
| 20 | Pitot-static tube |  |  |  |
| 6th | 21 | Rotameter, Turbine flow meter |  |  |  |
| 22 | Ultrasonic flow meter, Electromagnetic flow meter |  |  |  |
| 23 | Hot wire anemometer |  |  |  |
| 24 | Revision of 2nd unit |  |  |  |
| **7th** |  | **1st Sessionals** | | | |
| 8th | 25 | Discussion of 1st sessional |  |  |  |
| 26 | Measurement of Pressure - Manometers |  |  |  |
| 27 | Force summing devices |  |  |  |
| 28 | Electrical transducers |  |  |  |
| 9th | 29 | Measurement of Force - Strain-gauge load cells |  |  |  |
| 30 | Pneumatic load cell |  |  |  |
| 31 | LVDT type force transducer |  |  |  |
| 32 | Measurement of Torque - Torquemeter |  |  |  |
| 10th | 33 | Torsion meter |  |  |  |
| 34 | Absorption dynamometers |  |  |  |
| 35 | Inductive torque transducer |  |  |  |
| 36 | Digital methods |  |  |  |
| 11th | 37 | Revision of 3rd unit |  |  |  |
| 38 | Measurement of Temperature - Metallic resistance thermometers |  |  |  |
| 39 | Semiconductor resistance sensors (Thermistors) |  |  |  |
| 40 | Thermo-electric sensors |  |  |  |
| 12th | 41 | Pyrometers |  |  |  |
| 42 | Measurement of Liquid Level: Resistive Method |  |  |  |
| 43 | Inductive method |  |  |  |
| 44 | Capacitive |  |  |  |
| 13th | 45 | Measurement of Humidity: Resistive |  |  |  |
| 46 | Capacitive |  |  |  |
| 47 | Aluminum oxide & Crystal hygrometers. |  |  |  |
| 48 | Revision of 4th unit |  |  |  |
| **14th** |  | **2nd Sessionals** | | | |
| 15th | 49 | Discussion of 2nd sessional |  |  |  |
|  | 50 | Revision |  |  |  |
|  | 51 | Revision |  |  |  |
|  | 52 | Problem discussion |  |  |  |