**Lesson Plan**

**Name of faculty: Sanjay Charaya**

**Discipline: ECE**

**Semester: 8th**

**Subject: Transducers & its Applications (Only Theory Subject)**

Lesson Plan Duration: 15 weeks (from January, 2020 to April, 2020)

|  |  |  |
| --- | --- | --- |
| **Week** | **Theory** | |
|  | **Lecture day** | **Topic(Including assignment/ test)** |
| 1st |  | **Chapter 1 : Introduction:** Definition of transducer, Advantages of an electrical signal as output |
|  | Requirements of transducers |
|  | Primary and secondary transducers |
| 2nd |  | Analog and digital types of transducers |
|  | Resistive transducers-1 |
|  | Resistive transducers-2 |
| 3rd |  | Inductive transducers |
|  | Capacitive transducers |
|  | Piezoelectric transducers |
| 4th |  | Photoelectric |
|  | Hal effect transducers |
|  | **Chapter 2:** Measurement of Pressure-1 |
| 5th |  | Measurement of Pressure-2 |
|  | Manometers |
|  | Force summing devices and electrical transducers |
| 6th |  | **Chapter 3 :** Measurement of Temperature |
|  | Metallic resistance thermometer |
|  | Thermistors |
| 7th |  | Thermo-electric sensors |
|  | Pyrometers |
|  | **Chapter 4:** Measurement of Displacement |
| 8th |  | Potentiometric resistance type transducers-1 |
|  | Potentiometric resistance type transducers-2 |
|  | Inductive type transducers-1 |
| 9th |  | Inductive type transducers-2 |
|  | Differential transformer (LVDT) |
|  | Capacitive transducers |
| 10th |  | Hall effect devices |
|  | Strain gauge transducers |
|  | **Chapter 5:** Measurement of velocity |
| 11th |  | Variable reluctance pick up |
|  | Electromagnetic tachometer |
|  | Photoelectric tachometer |
| 12th |  | Toothed rotor tachometer generator |
|  | **Chapter 6:** Measurement of Force |
|  | Strain gauge load cells |
| 13th |  | Pneumatic load cell |
|  | LVDT Type force transducer |
|  | **Chapter 7:** Measurement of Torque |
| 14th |  | Torque meter |
|  | Torsion meter |
|  | Absorption dynamometer |
| 15th |  | Inductive torque transducer |
|  | Digital methods |