



## LESSON PLAN FOR SESSION 2023-24(SUMMER)

**SUBJECT- ELECTRICAL MEASUREMENT & INSTRUMENTATION SEM -4th BRANCH -ELECTRICAL ENGG.**

| SI NO. | DATE       | CHAPTER  | TOPIC NAME  | NO. OF PERIODS |
|--------|------------|--|---|----------------|
| 1      | 16-01-2024 | MEASURING INSTRUMENTS  | 1.1 Define accuracy , precision , Errors , Resolutions sensitivity and tolerance.                                     | 1              |
| 2      | 17-01-2024 |  | 1.2 classification of measuring instruments.  | 1              |
| 3      | 18-01-2024 |  | 1.2 CONTINUEING   | 1              |
| 4      | 19-01-2024 |  | 1.3 Explain deflection , controlling and damping arrangement in indicating type of instruments.                       | 1              |
| 5      | 22-01-2024 |  | 1.3 CONTINUEING   | 1              |
| 6      | 23-01-2024 |  | 1.4 calibration of instruments.   | 1              |
| 7      | 24-01-2024 | ANALOG AMMETERS AND VOLTMETERS                               | 2.1 Describe construction , principle of operation , errors , ranges merits and demerits of:                          | 1              |
| 8      | 25-01-2024 |  | 2.1 CONTINUEING   | 1              |
| 9      | 29-01-2024 |  | 2.1.1 moving iron type instruments.   | 1              |
| 10     | 30-01-2024 |  | 2.1.2 Permanent magnet moving coil type instruments.  | 1              |
| 11     | 31-01-2024 |  | 2.1.2 CONTINUEING   | 1              |
| 12     | 01-02-2024 |  | 2.1.3 Dynamometer type instruments.   | 1              |
| 13     | 02-02-2024 |  | 2.1.4 Rectifier type instruments.   | 1              |
| 14     | 05-02-2024 |  | 2.1.5 induction type instruments.   | 1              |
| 15     | 06-02-2024 |  | 2.2 extend the range of instruments type wattmeter and methods of their correction.                                   | 1              |
| 16     | 07-02-2024 |  | 2.2 CONTINUEING   | 1              |
| 17     | 08-02-2024 | 2.3 solve numerical  | 1   |                |
| 18     | 09-02-2024 | WATTMETERS AND MEASUREMENT OF POWER                          | 3.1 Describe construction , principal of working of dynamometer type wattmeter. (LPF and upf type)                    | 1              |
| 19     | 12-02-2024 |  | 3.1 CONTINUEING   | 1              |
| 20     | 13-02-2024 |  | 3.2 The Errors in dynamometer type wattmeter and methods of their correction.   | 1              |
| 21     | 15-02-2024 |  | 3.3 Discuss induction type watt meters.   | 1              |
| 22     | 16-02-2024 | ENERGY METERS AND MEASUREMENT OF ENERGY                      | 4.1 introduction  | 1              |
| 23     | 19-02-2024 |  | 4.2 single phase induction type energy meters- construction , working principal and their compensation & adjustments. | 1              |
| 24     | 20-02-2024 |  | 4.2 CONTINUEING   | 1              |
| 25     | 21-02-2024 | 4.3 testing of energy meters                                 | 1   |                |
| 26     | 22-02-2024 | MEASUREMENT OF SPEED FREQUENCY AND POWER FACTOR              | 5.1 tachometers types and working principles.   | 1              |
| 27     | 23-02-2024 |  | 5.2 principle of operation and construction of mechanical and electrical resonance type frequency meters.             | 1              |
| 28     | 26-02-2024 |  | 5.2 CONTINUEING   | 1              |
| 29     | 27-02-2024 |  | 5.3 principle of operation and working of dynamometer type single phase and three phase power factor meter.           | 1              |
| 30     | 28-02-2024 |  | 6.1 Classification of resistance  | 1              |
| 31     | 29-02-2024 | 6.1.1. Measurement of low resistance by potentiometer method | 6.1.1. Measurement of low resistance by potentiometer method  | 1              |
| 32     | 01-03-2024 |  | 6.1.1CONTINUEING  | 1              |
| 33     | 04-03-2024 |  | 6.1.2. Measurement of medium resistance by wheat Stone bridge   | 1              |
| 34     | 06-03-2024 |  | 6.1.2 CONTINUEING   | 1              |

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| 35 | 07-03-2024 | MESURMENT OF RESISTANCE , INDUCTANCE& CAPACITANCE                         | 6.1.3. Measurement of high resistance by loss of charge method.         | 1  |
| 36 | 11-03-2024 |   | 6.2 Construction, principle of operations of Megger & Earth tester for  | 1  |
| 37 | 12-03-2024 |   | 6.3 Construction and principles of Multimeter. (Analog and Digital)     | 1  |
| 38 | 13-03-2024 |   | 6.4 Measurement of inductance by Maxewell's Bridge method.              | 1  |
| 39 | 14-03-2024 |   | 6.5 Measurement of capacitance by Schering Bridge method                | 1  |
| 40 | 15-03-2024 |   | 6.5 CONTINUEING   | 1  |
| 41 | 18-03-2024 |   | 7.1. Define Transducer, sensing element or detector element and         | 1  |
| 42 | 19-03-2024 |   | CONTINUEING   | 1  |
| 43 | 20-03-2024 |   | 7.2. Classify transducer. Give examples of various class of transducer. | 1  |
| 44 | 21-03-2024 |   | 7.2CONTINUEING  | 1  |
| 45 | 22-03-2024 | 7.3. Resistive transducer   | 1   |    |
| 46 | 27-03-2024 | 7.3.1 Linear and angular motion potentiometer.                            | 1   |    |
| 47 | 28-03-2024 | 7.3.2 Thermistor and Resistance thermometers.                             | 1   |    |
| 48 | 02-03-2024 | 7.3.3 Wire Resistance Strain Gauges                                       | 1   |    |
| 49 | 03-03-2024 | 7.3.3 CONTINUEING   | 1   |    |
| 50 | 04-04-2024 | 7.4. Inductive Transducer   | 1   |    |
| 51 | 05-04-2024 | 7.4.1 Principle of linear variable differential Transformer (LVDT)        | 1   |    |
| 52 | 08-04-2024 | 7.4.1 CONTINUEING   | 1   |    |
| 53 | 09-04-2024 | 7.4.2 Uses of LVDT.   | 1   |    |
| 54 | 10-04-2024 | 7.5. Capacitive Transducer.   | 1   |    |
| 55 | 12-04-2024 | 7.5.1 General principle of capacitive transducer.                         | 1   |    |
| 56 | 15-04-2024 | 7.5.1 CONTINUEING   | 1   |    |
| 57 | 16-04-2024 | 7.5.2 Variable area capacitive transducer.                                | 1   |    |
| 58 | 18-04-2024 | 7.5.3 Change in distance between plate capacitive transducer.             | 1   |    |
| 59 | 19-04-2024 | 7.5.3 CONTINUEING   | 1   |    |
| 60 | 22-04-2024 | 7.6. Piezo electric Transducer and Hall Effect Transducer with their      | 1   |    |
| 61 | 23-04-2024 | 8.1. Principle of operation of Cathode Ray Tube.                          | 1   |    |
| 62 | 24-04-2024 | 8.2. Principle of operation of Oscilloscope (with help of block diagram). | 1   |    |
| 63 | 25-04-2024 | 8.3. Measurement of DC Voltage & current.                                 | 1   |    |
| 64 | 26-04-2024 | 8.4. Measurement of AC Voltage, current, phase & frequency.               | 1   |    |
|    |            |   | <b>TOTAL CLASS</b>  | 64 |

  
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