



SAKUNTALA SUDARSHAN INSTITUTE OF TECHNOLOGY (SSIT) (POLYTECHNIC)  
KALAKAD, KARANJI, MBJ, ODISHA-757037. Approved by AICTE, New Delhi & Affiliated to SCTE&VT, Orissa.  
LESSON PLAN : year :

|                                                        |                 |         |                             |                                                                                          |          |
|--------------------------------------------------------|-----------------|---------|-----------------------------|------------------------------------------------------------------------------------------|----------|
| BRANCH: Electrical & Electrical (I&C)                  |                 |         | SEMESTER<br>4 <sup>th</sup> | NAME OF THE FACULTY: BAISHALI PATRA                                                      |          |
| SUBJECT NAME: Electrical Measurement & Instrumentation |                 |         | NO. OF CLASSES              | SEMESTER FROM DATE:                                                                      | TO DATE: |
| MONTH                                                  | WEEK            | DATE    | DAY                         | TOPICS / SUB - TOPICS                                                                    |          |
| February                                               | 1 <sup>ST</sup> | 6/2/25  |                             | Measuring Instruments                                                                    |          |
|                                                        | 2 <sup>ND</sup> | 7/2/25  |                             | Define Accuracy, Precision, Errors, Resolutions, Sensitivity and tolerance.              |          |
|                                                        | 3 <sup>RD</sup> | 10/2/25 |                             | Classification of measuring instruments.                                                 |          |
|                                                        | 4 <sup>TH</sup> | 11/2/25 |                             | Explain Deflecting, controlling and damping arrangements in indicating type instruments. |          |
| February                                               | 1 <sup>ST</sup> | 12/2/25 |                             | Calibration of instruments.                                                              |          |
|                                                        | 2 <sup>ND</sup> | 13/2/25 |                             | Analog Ammeters and Voltmeters.                                                          |          |
|                                                        | 3 <sup>RD</sup> | 18/2/25 |                             | Describe Construction, principle of operation, errors, ranges merits and demerits.       |          |
|                                                        | 4 <sup>TH</sup> | 19/2/25 |                             | Moving irons type instruments                                                            |          |
| February                                               | 1 <sup>ST</sup> | 20/2/25 |                             | Permanent Magnet Moving coil type instruments.                                           |          |
|                                                        | 2 <sup>ND</sup> | 21/2/25 |                             | Dynamometer type instruments.                                                            |          |
|                                                        | 3 <sup>RD</sup> | 24/2/25 |                             | Rectifier type instruments.                                                              |          |
|                                                        | 4 <sup>TH</sup> | 27/2/25 |                             | Induction type instruments.                                                              |          |
| February & March                                       | 1 <sup>ST</sup> | 28/2/25 |                             | Extend the range of instruments by use of shunts and Multipliers.                        |          |
|                                                        | 2 <sup>ND</sup> | 3/3/25  |                             | Solve Numerical                                                                          |          |
|                                                        | 3 <sup>RD</sup> | 4/3/25  |                             | Wattmeters and Measurement of Power                                                      |          |
|                                                        | 4 <sup>TH</sup> | 5/3/25  |                             | Describe Construction, principle of working of Dynamometer type wattmeter                |          |

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| SUBJECT NAME : |                   |         |     | NO. OF CLASSES                                                                 | SEMESTER FROM DATE :  | TO DATE : |
| MONTH          | WEEK              | DATE    | DAY | TOPICS / SUB - TOPICS                                                          |                       |           |
| March          | 1 <sup>ST</sup> - | 6/3/25  |     | Dynamometer type wattmeter (LPF and VPF type).                                 |                       |           |
|                | 2 <sup>ND</sup> - | 7/3/25  |     | The Errors in dynamometer type wattmeter and methods of their correction.      |                       |           |
|                | 3 <sup>RD</sup> - | 10/3/25 |     | Discuss Induction type watt meters.                                            |                       |           |
|                | 4 <sup>TH</sup> - | 11/3/25 |     | Energymeters and Measurement of Energy                                         |                       |           |
| March          | 1 <sup>ST</sup> - | 12/3/25 |     | Introduction of Energymeters and Measurement of Energy.                        |                       |           |
|                | 2 <sup>ND</sup> - | 13/3/25 |     | Single phase Induction type Energy meters.                                     |                       |           |
|                | 3 <sup>RD</sup> - | 17/3/25 |     | Construction, working principle and their Compensation & adjustments.          |                       |           |
|                | 4 <sup>TH</sup> - | 18/3/25 |     | Testing of Energy Meters                                                       |                       |           |
| March          | 1 <sup>ST</sup> - | 20/3/25 |     | Measurement of speed, frequency and Power Factor                               |                       |           |
|                | 2 <sup>ND</sup> - | 24/3/25 |     | Tachometers, types and working principles.                                     |                       |           |
|                | 3 <sup>RD</sup> - | 25/3/25 |     | Principle of operation and construction of Mechanical and Electrical resonance |                       |           |
|                | 4 <sup>TH</sup> - | 26/3/25 |     | Principle of operation and working of Dynamometer type single and three phase  |                       |           |
| March & April  | 1 <sup>ST</sup> - | 27/3/25 |     | Measurement of Resistance Inductance & Capacitance                             |                       |           |
|                | 2 <sup>ND</sup> - | 28/3/25 |     | Classification of resistance, Measurements of low resistance by potentiometer. |                       |           |
|                | 3 <sup>RD</sup> - | 1/4/25  |     | Measurement of medium resistance by wheat Stone bridge method.                 |                       |           |
|                | 4 <sup>TH</sup> - | 3/4/25  |     | Measurement of high resistance by loss of charge method.                       |                       |           |

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| MONTH          | WEEK            | DATE    | DAY            | TOPICS / SUB - TOPICS                                                    |           |
| April          | 1 <sup>ST</sup> | 4/4/25  |                | Construction, principle of operations of Megger & Earth tester.          |           |
|                | 2 <sup>ND</sup> | 7/4/25  |                | Insulation resistance and earth resistance measurement respectively.     |           |
|                | 3 <sup>RD</sup> | 8/4/25  |                | Construction and principles of Multimeter. (Analog and Digital)          |           |
|                | 4 <sup>TH</sup> | 9/4/25  |                | Measurement of inductance by Maxwell's Bridge Method.                    |           |
| April          | 1 <sup>ST</sup> | 10/4/25 |                | Measurement of capacitance by Schering Bridge method.                    |           |
|                | 2 <sup>ND</sup> | 11/4/25 |                | Sensors and Transducer                                                   |           |
|                | 3 <sup>RD</sup> | 15/4/25 |                | Define transducer, sensing element or detector element and transduction. |           |
|                | 4 <sup>TH</sup> | 16/4/25 |                | Classify transducer. Give examples of various class of transducer.       |           |
| April          | 1 <sup>ST</sup> | 17/4/25 |                | Resistive transducer                                                     |           |
|                | 2 <sup>ND</sup> | 21/4/25 |                | Linear and angular motion potentiometer.                                 |           |
|                | 3 <sup>RD</sup> | 22/4/25 |                | Thermistor and Resistance thermometers.                                  |           |
|                | 4 <sup>TH</sup> | 23/4/25 |                | Wire Resistance Strain Gauges                                            |           |
| April          | 1 <sup>ST</sup> | 24/4/25 |                | Inductive Transducer.                                                    |           |
|                | 2 <sup>ND</sup> | 25/4/25 |                | Principle of linear variable differential Transformer (LVDT)             |           |
|                | 3 <sup>RD</sup> | 28/4/25 |                | Uses of LVDT                                                             |           |
|                | 4 <sup>TH</sup> | 29/4/25 |                | Capacitive Transducer.                                                   |           |

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| MONTH :        |         |     |                                                                  | SEMESTER FROM DATE : | TO DATE :             |
| WEEK           | DATE    | DAY | TOPICS / SUB - TOPICS                                            |                      |                       |
| April & May    | 30/4/25 |     | General principle of capacitive transducer.                      |                      |                       |
|                | 31/4/25 |     | Variable area Capacitive transducer.                             |                      |                       |
|                | 1/5/25  |     | Change in distance bet <sup>n</sup> plate capacitive transducer. |                      |                       |
|                | 2/5/25  |     | Piezo electric Transducer.                                       |                      |                       |
| May            | 5/5/25  |     | Hall Effect transducer with their application                    |                      |                       |
|                | 6/5/25  |     | Oscilloscope                                                     |                      |                       |
|                | 7/5/25  |     | Principle of operation of cathode Ray Tube.                      |                      |                       |
|                | 8/5/25  |     | Principle of operation of Oscilloscope.                          |                      |                       |
| May            | 9/5/25  |     | Oscilloscope with help of block diagram                          |                      |                       |
|                | 12/5/25 |     | Measurement of DC Voltage                                        |                      |                       |
|                | 13/5/25 |     | Measurement of DC Current                                        |                      |                       |
|                | 14/5/25 |     | Measurement of AC voltage                                        |                      |                       |
|                | 15/5/25 |     | Measurement of AC Current                                        |                      |                       |
|                | 16/5/25 |     | Measurement of AC phase & frequency.                             |                      |                       |
|                |         |     |                                                                  |                      |                       |
|                |         |     |                                                                  |                      |                       |

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