| Lesson Plan | | | |
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| | Discipline:Electrical Engineering | Semester-4th Summer 2024 | Name of the Teachng Faculty: Debasis Kar |
| Sl. No. | Subject-ELECTRICAL MEASUREMENT & INSTRUMENTATION | No. Of Days/Week class alloted:05 | Semester From date: 16/01/2024 To date: 26/04/2024. No of weeks: 15 |
| | Weeks/Months | Class Day | Topic |
| 1 | 1st Week | 1st(16.01.2024) | 1.1 Define Accuracy, precision, Errors, Resolutions Sensitivity and tolerance |
| | | 2nd(17.01.2024) | 1.2 Classification of measuring instruments. |
| | | 3rd(17.01.2024) | 1.3 Explain Deflecting, controlling and damping arrangements in indicating type of instruments |
| | | 4th(19.01.2024) | 1.3 Explain Deflecting, controlling and damping arrangements in indicating type of instruments |
| 2 | 2nd Week | 1st(22.01.2024) | 1.4 Calibration of instruments. |
| | | 2nd(24.01.2024) | 2.1. Describe Construction, principle of operation, errors, ranges merits and demerits of: 2.1.1 Moving iron type instruments. |
| | | 3rd(24.01.2024) | 2.1. Describe Construction, principle of operation, errors, ranges merits and demerits of: 2.1.1 Moving iron type instruments. |
| 3 | 3rd Week | 1st(29.01.2024) | 2.1. Describe Construction, principle of operation, errors, ranges merits and demerits of: 2.1.1 Moving iron type instruments. |
| | | 2nd(30.01.2024) | 2.1. Describe Construction, principle of operation, errors, ranges merits and demerits of: 2.1.1 Moving iron type instruments. |
| | | 3rd(31.01.2024) | 2.1. Describe Construction, principle of operation, errors, ranges merits and demerits of: 2.1.3 Dynamometer type instruments |
| | | 4th(31.01.2024) | 2.1. Describe Construction, principle of operation, errors, ranges merits and demerits of: 2.1.3 Dynamometer type instruments |
| | | 5th(02.02.2024) | 2.1. Describe Construction, principle of operation, errors, ranges merits and demerits of:2.1.4 Rectifier type instruments |
| 4 | 4th Week | 1st(05.02.2024) | 2.1. Describe Construction, principle of operation, errors, ranges merits and demerits of:2.1.4 Rectifier type instruments |
| | | 2nd(06.02.2024) | 2.1. Describe Construction, principle of operation, errors, ranges merits and demerits of 2.1.5 Induction type instruments |
| | | 3rd(07.20.2024) | 2.2 Extend the range of instruments by use of shunts and Multipliers. 2.3 Solve Numerical |
| | | 4th(07.02.2024) | 3.1 Describe Construction, principle of working of Dynamometer type wattmeter. |
| | | 5th(09.02.2024) | 3.1 Describe Construction, principle of working of Dynamometer type wattmeter. |
| 5 | 5th Week | 1st(12.02.2024) | 3.1 Describe Construction, principle of working of Dynamometer type wattmeter. |
| | | 2nd(13.02.2024) | 3.2 The Errors in Dynamometer type wattmeter and methods of their correction. |
| | | 3rd(16.02.2024) | 3.2 The Errors in Dynamometer type wattmeter and methods of their correction. |
| 6 | 6th Week | 1st(19.02.2024) | 3.3 Discuss Induction type watt meters. |
| | | 2nd(20.02.2024) | 3.3 Discuss Induction type watt meters. |
| | | 3rd(21.02.2024) | 3.3 Discuss Induction type watt meters. |
| | | 4th(21.02.2024) | Introduction to energy meters. |
| | | 5th(23.02.2024) | 4.2 Single Phase Induction type Energy meters – construction, working principle and their compensation & adjustments. |
| 7 | 7th Week | 1st(26.02.2024) | 4.2 Single Phase Induction type Energy meters – construction, working principle and their compensation & adjustments. |
| | | 2nd(27.02.2024) | 4.2 Single Phase Induction type Energy meters – construction, working principle and their compensation & adjustments. |
| | | 3rd(28.02.2024) | 4.2 Single Phase Induction type Energy meters – construction, working principle and their compensation & adjustments. |
| | | 4th(28.02.2024) | 4.3 Testing of Energy Meters. |
| | | 5th(01.03.2024) | 4.3 Testing of Energy Meters. |

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| 8 | 8th Week | 1st(04.03.2024) | 4.3 Testing of Energy Meters. |
| | | 2nd(06.03.2024) | 5.1 Tachometers, types and working principles |
| | | 3rd(06.03.2024) | 5.1 Tachometers, types and working principles |
| | | 4th(09.03.2024) | 5.2 Principle of operation and construction of Mechanical and Electrical resonance Type frequency meters. |
| 9 | 9th Week | 1st(11.03.2024) | 5.2 Principle of operation and construction of Mechanical and Electrical resonance Type frequency meters. |
| | | 2nd(12.03.2024) | 5.2 Principle of operation and construction of Mechanical and Electrical resonance Type frequency meters. |
| | | 3rd(13.03.2024) | 5.3 Principle of operation and working of Dynamometer type single phase and three phase power factor meters. |
| | | 4th(13.03.2024) | 5.3 Principle of operation and working of Dynamometer type single phase and three phase power factor meters. |
| | | 5th(15.03.2024) | 6.1 Classification of resistance |
| 10 | 10th Week | 1st(18.03.2024) | 6.1..1. Measurement of low resistance by potentiometer method. . |
| | | 2nd(19.03.2024) | 6.1..2. Measurement of medium resistance by wheat Stone bridge method. 6.1..3. Measurement of high resistance by loss of charge method. |
| | | 3rd(20.03.2024) | 6.2 Construction, principle of operations of Megger & Earth tester for insulation resistance and earth resistance measurement respectively |
| | | 4th(20.03.2024) | 6.3 Construction and principles of Multimeter. (Analog and Digital) |
| | | 5th(22.03.2024) | 6.3 Construction and principles of Multimeter. (Analog and Digital) |
| 11 | 11th Week | 1st(27.03.2024) | 6.4 Measurement of inductance by Maxewell's Bridge method. |
| | | 2nd(27.03.2024 | 6.4 Measurement of inductance by Maxewell's Bridge method. |
| 12 | 12th Week | 1st(02.04.2024) | 6.5 Measurement of capacitance by Schering Bridge method |
| | | 2nd(03.04.2024) | 6.5 Measurement of capacitance by Schering Bridge method |
| | | 3rd(03.04.2024) | 7.1. Define Transducer, sensing element or detector element and transduction elements. |
| | | 4th(05.04.2024) | 7.2. Classify transducer. Give examples of various class of transducer |
| 13 | 13th Week | 1st(08.04.2024) | 7.3. Resistive transducer |
| | | 2nd(09.04.2024) | 7.3.1 Linear and angular motion potentiometer |
| | | 3rd(10.04.2024) | 7.3.2 Thermistor and Resistance thermometer |
| | | 4th(10.04.2024) | 7.3.3 Wire Resistance Strain Gauges |
| | | 5th(12.04.2024) | 7.4.1 Principle of linear variable differential Transformer (LVDT) |
| 14 | 14th Week | 1st(15.04.2024) | 7.4.1 Principle of linear variable differential Transformer (LVDT) |
| | | 2nd(16.04.2024) | 7.4.2 Uses of LVDT.<br>7.5. Capacitive Transducer.<br>7.5.1 General principle of capacitive transducer. |
| | | 3rd(19.04.2024) | 7.5.2 Variable area capacitive transducer.<br>7.5.3 Change in distance between plate capacitive transducer |
| 15 | 15th Week | 1st(22.024.2024) | 7.6. Piezo electric Transducer and Hall Effect Transducer with their applications. |
| | | 2nd(23.04.2024) | 8.1. Principle of operation of Cathode Ray Tube. |
| | | 3rd(24.04.2024) | 8.2. Principle of operation of Oscilloscope (with help of block diagram) |
| | | 4th(24.04.2024 | 8.3. Measurement of DC Voltage & current |
| | | 5th(26.04.2024) | 8.4. Measurement of AC Voltage, current, phase & frequency |

D.Kar
16/01/2024