

| <b>LESSON PLAN</b><br><b>FUNDAMENTAL OF ELECTRICAL &amp; ELECTRONICS LAB</b><br><b>BY: NIHARIKA SETHY</b> <b>WEF 17.08.26 TO 17.04.27</b> |                                                                                                                        |             |
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| Class/Week:2                                                                                                                              | List of the Practical                                                                                                  | No of Hours |
| W1                                                                                                                                        | Determine the permeability of magnetic material by plotting its B-H curve.                                             | 2           |
| W2                                                                                                                                        | Measure voltage, current and power in 1-phase circuit with resistive load                                              | 2           |
| W3                                                                                                                                        | Study of 1-phase transformer (structure).                                                                              | 2           |
| W4                                                                                                                                        | Connect single phase transformer and measure input and output quantities. Also determine the transformation ratio (K). | 2           |
| W5                                                                                                                                        | Connect single phase transformer and determine the transformation ratio(K)                                             | 2           |
| W6                                                                                                                                        | Study of different parts of DC machines.                                                                               | 2           |
| W7                                                                                                                                        | Study of PMMC type of instruments (ammeter, voltmeter).                                                                | 4           |
| W8                                                                                                                                        | Study of MI type of instruments (ammeter, voltmeter).                                                                  |             |
| W9                                                                                                                                        | Study of PMMC, MI types of instruments (wattmeter, energy meter).                                                      | 2           |
| W10                                                                                                                                       | Wiring Connection of Fluorescent lamp/tube light.                                                                      | 2           |
| W11                                                                                                                                       | Wiring Connection of tube light.                                                                                       | 2           |
| W12                                                                                                                                       | Prepare an electrical switch board to control one light point, one plug point, one fan point and a fuse.               | 2           |
| W13                                                                                                                                       | Prepare an electrical switch board to control one light point, one plug point, one fan point and a fuse                | 2           |
| W14                                                                                                                                       | Prepare a report on power billing(monthly) of a domestic single phase wiring system.                                   | 2           |
| W15                                                                                                                                       | Prepare a report on power billing(monthly) of a domestic single phase wiring system                                    | 2           |
| W16                                                                                                                                       | Identify various passive and active electronics components                                                             | 2           |
| W17                                                                                                                                       | Connect resistors in series and parallel combination and measure its value using digital multimeter                    | 2           |
| W18                                                                                                                                       | Connect resistors in parallel combination and measure its value using digital multimeter                               | 2           |
| W19                                                                                                                                       | Connect capacitors in series and parallel combination and measure its value using multimeter                           | 2           |
| W20                                                                                                                                       | Use multimeter to measure the value of given resistor and determine the value to confirm with colour code              | 2           |
| W21                                                                                                                                       | Use multimeter to measure the value of given resistor and determine the value to confirm with colour code              | 2           |
| W22                                                                                                                                       | Test the PN-junction diode and LED using digital multimeter.                                                           | 2           |
| W23                                                                                                                                       | Test the performance of PN-junction diode                                                                              | 2           |
| W24                                                                                                                                       | Test the performance of PN-junction diode                                                                              | 2           |
| W25                                                                                                                                       | Test the performance of Zener diode                                                                                    | 2           |
| W26                                                                                                                                       | Test the performance of Zener diode                                                                                    | 2           |
| W27                                                                                                                                       | Study of half wave and full wave rectifier                                                                             | 2           |
| W28                                                                                                                                       | Study of half wave and full wave rectifier                                                                             | 2           |
| W29                                                                                                                                       | Study of half wave and full wave rectifier                                                                             | 2           |
| W30                                                                                                                                       | Identify three terminals of a transistor using digital multimeter                                                      | 2           |

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| W31 | Familiarization with different types of logic gates  | 2 |
| W32 | Familiarization with different types of logic gates. | 2 |

**Course Outcomes:**

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|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO1 | Able to do measurements of electrical quantities in basic electrical circuits and magnetic circuits using appropriate instruments. Calculate voltage, current and power in 1-phase circuit.                              |
| CO2 | Able to identify the constructional features and operating principles of transformers, DC machines, and electrical measuring instruments. Distinguish various electronic components and measure values using multimeter, |
| CO3 | Able to do electrical wiring practices and analyze domestic electrical energy consumption and billing.                                                                                                                   |
| CO4 | Able to identify and test passive electronic components and determine their characteristics using measuring instruments.                                                                                                 |
| CO5 | Able to analyze the performance of semiconductor devices such as diodes, LEDs, Zener diodes, and transistors.                                                                                                            |
| CO6 | Able to identify and verify the operation of basic digital logic gates and apply them in simple digital circuits                                                                                                         |

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31.07.26