**Lesson Plan**

Name of the Faculty : Ravi kant

Discipline : Mechanical Engg.

Semester : 3rd

Subject : BEEE

Lesson plan duration : 15 weeks (from Sept 2023 to Jan 2024)

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| Week | Theory | | Practical | |
| Lecture Day | Topic (including assignments /tests) | Practical Day | Topic |
| Week 1 | 1st | Application and Advantage of Electricity: Difference between ac and dc, | 1st | Connection of a three-phase motor and starter with fuses and reversing of  direction of rotation / Theory Work |
| 2nd | various applications of electricity | 2nd | Connection of a three-phase motor and starter with fuses and reversing of  direction of rotation / Practical Work |
| 3rd | Advantages of electrical energy over other types of energy |
| Week 2 | 1st | **Basic Electrical Quantities:** Definition of voltage, current, power and energy | 1st | Connection of a three-phase motor and starter with fuses and reversing of  direction of rotation / Theory Work |
| 2nd | Name of instruments used for measuring above quantities | 2nd | Connection of a three-phase motor and starter with fuses and reversing of  direction of rotation / Practical Work |
| 3rd | Assignment & Revision |
| Week 3 | 1st | **Electromagnetic Induction :** Production of e.m.f., | 1st | To test a battery for its charged and discharged condition. /Theory Work |
| 2nd | Idea of a transformer and its working principle |
| 3rd | **Transmission and Distribution System:** Key diagram of 3 phase transmission and distribution system | 2nd | To test a battery for its charged and discharged condition. / Practical Work |
| Week 4 | 1st | Brief functions of accessories of transmission line. | 1st | Identify the different faults in a domestic wiring system / Theory Work |
| 2nd | Difference between high and low voltage  distribution system |
| 3rd | Identification of three-phase wires, neutral wire and earth wire in a low voltage distribution system. | 2nd | Identify the different faults in a domestic wiring system / Practical Work |
| Week 5 | 1st | Identification of voltages between phases and between one phase and neutral. | 1st | Connection and reading of an electric energy meter with supply and load using ammeter / Theory Work |
| 2nd | Difference between three-phase and single-phase supply. |
| 3rd | Arrangement of supply system from pole to the distribution board | 2nd | Connection and reading of an electric energy meter with supply and load using ammeter / Practical Work |
| Week 6 | 1st | Function of service line,energy meter, main switch, distribution board | 1st | Connection and reading of an electric energy meter with supply and load using voltmeter / Theory Work |
| 2nd | **Domestic Installation:** Various types of domestic circuits |
| 3rd | Various accessories and parts of domestic  electrical installation | 2nd | Connection and reading of an electric energy meter with supply and load using voltmeter, wattmeter / Practical Work |
| Week 7 | 1st | Identification of wiring systems, | 1st | Connection and reading of an electric energy meter with supply and load using wattmeter / Theory Work |
| 2nd | Staircase installation |
| 3rd | Assignment & Revision | 2nd | Connection and reading of an electric energy meter with supply and load usingwattmeter / Practical Work |
| Week 8 | 1st | **Electric Motors and Pumps:** Definition and various applications of single-phase and three-phase motors | 1st | Study of a distribution board for domestic installation / Theory Work |
| 2nd | Connection and starting of three-phase induction motors by star-delta starter |
| 3rd | Conversion of horse power in watts or kilowatts | 2nd | Study of a distribution board for domestic installation / Practical Work |
| Week 9 | 1st | Type of pumps and their applications, | 1st | Ohm’s law verification / Theory Work |
| 2nd | Difference between direct online starter and star delta starter |
| 3rd | Characteristics and applications of servo motors. | 2nd | Ohm’s law verification / Practical Work |
| Week10 | 1st | Assignment | 1st | Verification of law of resistance in series / Theory Work |
| 2nd | **Electrical Safety:** Electrical shock and precautions against shock |
| 3rd | Treatment of electric shock | 2nd | Verification of law of resistance in series / Practical Work |
| Week11 | 1st | Concept of fuses and their classification | 1st | Verification of law of resistance in parallel / Theory Work |
| 2nd | Selection and application of Fuses |
| 3rd | Concept of earthing and various types of earthing, | 2nd | Verification of law of resistance in parallel / Practical Work |
| Week12 | 1st | Concept of earthing and various types of earthing, | 1st | Draw V-I characteristics of P-N junction diode / Theory Work |
| 2nd | **Basic Electronics:** Basic idea of semiconductors |
| 3rd | P and N type; diodes | 2nd | Draw V-I characteristics of P-N junction diode / Practical Work |
| Week13 | 1st | Zener diodes and their applications | 1st | Draw input and output characters of a transistor / Theory Work |
| 2nd | Transistor – PNP and NPN, symbols |
| 3rd | Identification of terminals of transistor | 2nd | Draw input and output characters of a transistor / Practical Work |
| Week14 | 1st | Current flowing in a transistor | 1st | Draw input and output characters of a transistor / Theory Work |
| 2nd | Characteristics and uses |
| 3rd | Characteristics and applications of a thyristor | 2nd | Draw input and output characters of a transistor / Practical Work |
| Week15 | 1st | Revision | 1st | VIVA VOCE |
| 2nd | Revision & assignment |
| 3rd | Test | 2nd | VIVA VOCE |