

Electrical Workshop

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|--|--------------|---------------------------------|-------|----------------------|-----|
| Course Code | 19EE3251 | Year | I | Semester | II |
| Course Category | Program Core | Branch | EEE | Course Type | Lab |
| Credits | 1.5 | L-T-P | 0-0-3 | Prerequisites | Nil |
| Continuous Internal Evaluation: | 25 | Semester End Evaluation: | 50 | Total Marks: | 75 |

| Course Outcomes | |
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| Upon successful completion of the course, the student will be able to | |
| CO1 | Familiarize with electrical tools, symbols ,cables and switch gear device |
| CO2 | Understand the wiring of various electrical circuits |
| CO3 | Measure various electrical quantities |
| CO4 | Learn the procedure to start various DC and AC machines |

| Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (H:High, M: Medium, L:Low) | | | | | | | | | | | | | | |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
| CO1 | H | | M | | | M | M | M | | | M | M | M | L |
| CO2 | H | | M | | | M | M | M | | | M | M | M | L |
| CO3 | H | | M | | | M | M | M | | | M | M | M | L |
| CO4 | H | | M | | | M | M | M | | | M | M | M | L |

| Syllabus | | |
|------------------|---|------------------|
| Expt. No. | Contents | Mapped CO |
| I | Study of various electrical tools and symbols | CO1 |
| II | Identify different types of cables/wires and switches, fuses & fuse carriers, MCB and ELCB, MCCB with ratings and usage | |
| III | Wiring of light/fan circuit using two way/three way control (Staircase wiring) | CO2 |
| IV | Go-down wiring / Tunnel wiring | |
| V | Wiring of power distribution arrangement using single phase MCB distribution board with ELCB, Main switch and Energy meter. | |
| VI | Wiring of backup power supply including inverter, battery and load for domestic installations | CO3 |
| VII | Measurement of voltage, current, resistance in DC circuit. | |
| VIII | Measurement of voltage, current and power in single phase circuit using voltmeter, ammeter and wattmeter. Calculate the power factor of the circuit | CO4 |
| IX | Starting of DC shunt motor using three-point starter. | |
| X | Starting of DC series motor using two-point starter. | |
| XI | Starting of single-phase induction motor. | |
| XII | Starting of three phase induction motor | |

| Learning Resources |
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| Text Books |

1. D.P.Kothari, I.J.Nagrath, Basic Electrical and Electronics Engineering, 1st edition, McGraw Hill Education (India) Private Limited, 2017.
- 2 B.L.Theraja, Fundamentals of Electrical Engineering and Electronics, 1st edition, S.Chand Publishing, New Delhi, 2006.
3. Adel S. Sedra and Kenneth C. Smith, Microelectronic Circuits 6th edition, Oxford University Press, 2014.