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## **COURSE CONTENT**

**Duration: 30 hours**

### **I. Electrical Fundamentals: ( 15 hours)**

How electricity is produced and distributed, voltage, current and resistance, Ohms law, resistors, capacitors, colour code, Faraday's law of electromagnetic induction, voltage step-up and step-down process, diodes, AC-DC conversion, single phase and three phase circuits, fuse, earthing, units of electricity, electricity bill calculation.

### **II. Practical (Hands-on circuit building activities):(10 Hours)**

1. Use multi-meter readings to measure voltage, current, continuity, resistance, etc...
2. Hands-on circuit (parallel and series circuits) building activities (soldering) with resistors, capacitors, diodes and LEDs.
3. Construction of rectifier- voltage step down and AC to DC conversion.
4. Clearing different modes of failure: open circuits, short circuits, and ground faults.

### **III. Dissertation Project: (5 Hours)** Your dissertational project will ideally be related to daily live electricity.

