Skill Enhancement Courses: PH-SEC

B.Sc. Semester-I
Course code: PH-SEC-1
Total Credits: 02 (Theory: 1, Practical; 1)
Total Hrs: Theory: 15, Practical: 30
Course Title: Electrical Circuits and Network Skills

PH-SEC-1
Electrical Circuits and Network Skills (Theory)

Unit-1	**Basic Electricity Principles**: Voltage, Current, Resistance, and Power. Ohm's law. Series, parallel, and series-parallel combinations. AC Electricity and DC, Electricity. Familiarization with multimeter, voltmeter and ammeter. **DC Power sources**: AC/DC generators. Inductance, capacitance, and impedance. Operation of transformers.
Unit-2	**Main electric circuit elements and their combination**: Rules to analyze DC sourced electrical circuits. Current and voltage drop across the DC circuit elements. Single phase and three-phase alternating current sources. Rules to analyze AC sourced electrical circuits. Real, imaginary and complex power components of AC source. Power factor. Saving energy and money, **Reading of circuit schematics**.: Tracking the connections of elements and identifying current flow and voltage drop.

Recommended Books:

1. A textbook in Electrical Technology - B L Theraja - S Chand & Co.
2. A textbook of Electrical Technology - A K Theraja
3. Performance and design of AC machines - M G Say ELBS Edn.