

GUJARAT UNIVERSITY

Syllabus for First Year B.Sc. Semester – II Effective from June 2023

SEC-PHY-126 (2 Credit)

Electrical and Electronics Skills

The aim of this course is to enable the students to familiar and experience with various electrical and electronic tools through hands on mode.

Unit I

[15 Hours]

Basics of soldering

1. Understanding of soldering tools and materials (solder, flux, etc.)
2. Practicing soldering and de-soldering with proper method.
3. Practicing soldering of electrical circuit having discrete components (R, L, C, diode, transistor etc.) on printed circuit board (PCB).

Power Supply

1. Designing of center tapped full wave rectifier without and with C-filter.
2. Designing and testing of a 9-volt power supply with Zener diode.

Unit II

[15 Hours]

Opto-electronic devices

1. Light emitting diode LED (study of characteristics)
2. Solar cell or photo-voltaic cell (study of characteristics).

Logic gates

1. Design of half adder using AND gate and EX-OR gate. Verify truth table.
2. Design of full adder using AND gate and EX-OR gate. Verify truth table.
3. Design of half subtractor using AND gate, NOT and EX-OR gate. Verify truth table.
4. Design of full subtractor using AND gate, NOT and EX-OR gate. Verify truth table.

Book:

A textbook of electrical technology and electronics devices and circuits by B L Theraja and R S Shedha