

St. Xavier's College (Autonomous), Ahmedabad

Syllabus of Semester – I to be implemented from the Academic Year 2023-24.

FACULTY OF SCIENCE

DEPARTMENT OF PHYSICS & ELECTRONICS

Skill Enhanced Course–1: Basic Skill in Electronics: Soldering, Testing and Fabrication **2Cr** **50 Marks**

Course Code & Title	Credit Distribution of The Course				Eligibility Criteria	Prerequisite(s) of the Course
	Cr	Lecture	Lab	Activities		
SEC 1650 Basic Skill in Electronics: Soldering, Testing and Fabrication	2	1Cr	1Cr	Project on: Mobile charger/DC variable power supplier	10+2	Science Stream Math-Group

Learning Objectives

- In this course student learn basic electronics and its implication in few circuit designing.
- Students learn on bread board and later on PCB with soldering.
- Students learn to work in electronic workshop and making his own product like mobile charger/DC power supply source.

Learning Outcomes

- This course develops skills in students like: soldering of circuits, testing of the circuits and make a finished product out of it.
- Skill of identify the bug/fault of circuit and attempt to rectify it.

Unit: 1 Electronic Components and Instruments **1Cr (15 Hours)**

- (A) Components: Resistors, Capacitors, Inductors, Transformer, PN Junction diode, Zener diode, Transistor
- (B) Instruments: Ammeter (AC/DC), Voltmeter (AC/DC), Multimeter, Audio frequency oscillator(AFO), Function generator, Cathode Ray Tube (CRO)

Text Book:

Articles no:

Unit: 2 Laboratory work and Workshops **1Cr (30 Hours)**

Basic Electronic

1. Identification and testing of various active and passive components
2. CRO: Frequency, Periodic time and phase
3. Use of Function generator, AFO, Multimeter and power supply

Soldering on PCB and Bread board

4. To design and construct Half wave rectifier circuit using PN junction diode
5. To design and construct Full wave rectifier circuit using PN junction diode
6. To design and construct RL Low pass filter
7. To design and construct RL High pass filter
8. Transistor I/P and O/P characteristics

Workshop

- To build a DC power supplier on bread board first and further same circuit will be soldered and tested on PCB.
- Finally, the finished and tested circuit will be fabricated to make it final products with variable button, connectors and fuse.