



Sir P. T. Sarvajanik College of Science

(AUTONOMOUS)

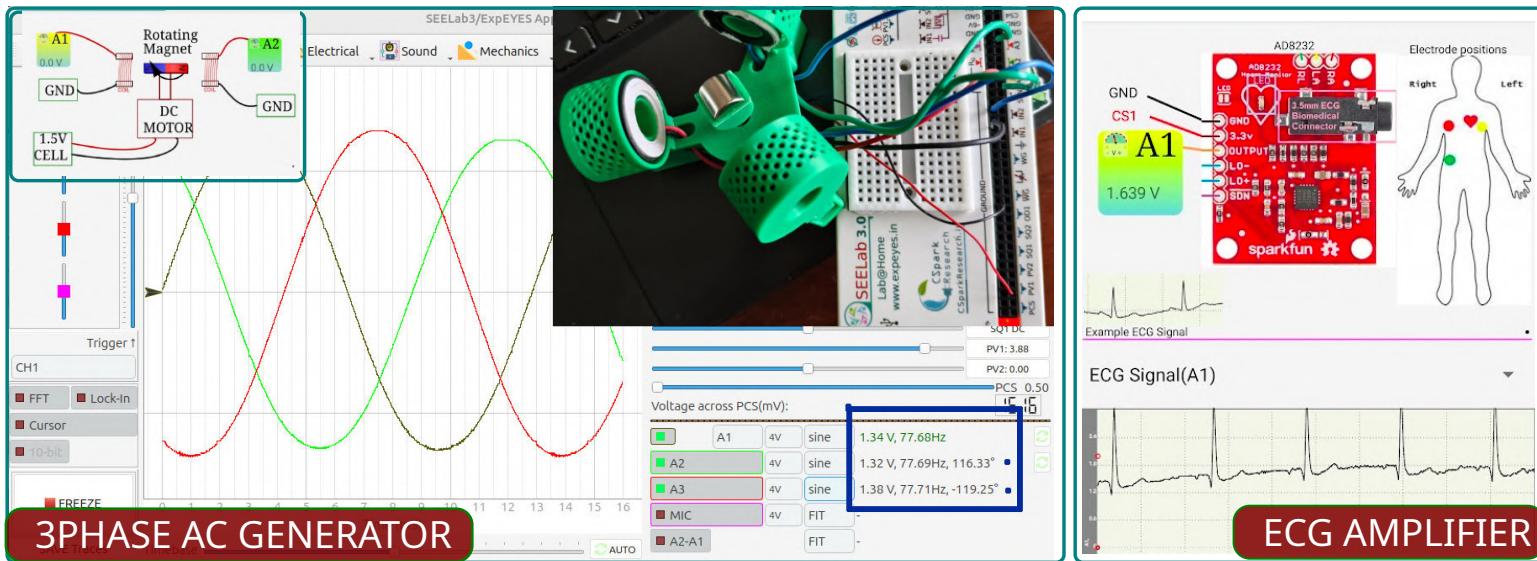
Re-Accredited 'A+' with CGPA 3.35

PRESENTS

Training program on
Computer Interfaced Science Experiments

12-13 December

The Future of Hands-On Science



3PHASE AC GENERATOR

ECG AMPLIFIER

Transform your approach to teaching science with this intensive two day workshop, designed to equip you with the skills to facilitate genuine discovery and exploration in the classroom. We shall focus on crucial learning takeaways such as real-time data acquisition and analysis, critical thinking through experimental design, and advanced graphical interpretation of physical phenomena. Leveraging the incredible computing power of modern mobile phones alongside affordable, multi-functional instruments for measurement and signal generation, such as the SEE Lab 3.0, this workshop will equip teachers, students, and citizen science enthusiasts to augment their experimental research !

TARGETED PARTICIPANTS

**Faculty and students of Science/
Engineering disciplines**

REGISTER BY: 05/12/2025

COORDINATOR

Dr. Dhiraj Shah +91 94291 60805

Registration Link
Rs 800 for Teachers, 200 for Students

VENUE

**12TH DECEMBER 2025
13TH DECEMBER 2025**

**Sir P. T. Sarvajanik College of Science
Athwalines, Surat 395001, Gujarat**





SEELab3 : YOUR LAB @ HOME

 100+ SCIENCE EXPERIMENTS

100+ SCIENCE EXPERIMENTS

WAVEGEN **WG , WG**

The WG Pin outputs a 3 volt amplitude sine/triangle wave signal with adjustable frequency from 4Hz to 5kHz. The amplitude can also be adjusted down to 80mV, and a 180 phase shifted signal is available on WG

2MSPS OSCILLOSCOPE

A1, A2, A3, MIC, SEN, IN1

4 Input channels to record up to a million voltage readings within one second. Useful for studying voltage fluctuations, and calculating frequency and phase shifts of periodic signal inputs. A1/A2: +/-16Volts, A3: +/-3V, MICphone Input, and an internally pulled up SEN Input. Also used as 12 bit voltmeters

VOLTAGE SOURCES

PV1 PV2 OD1 5V +/-6V

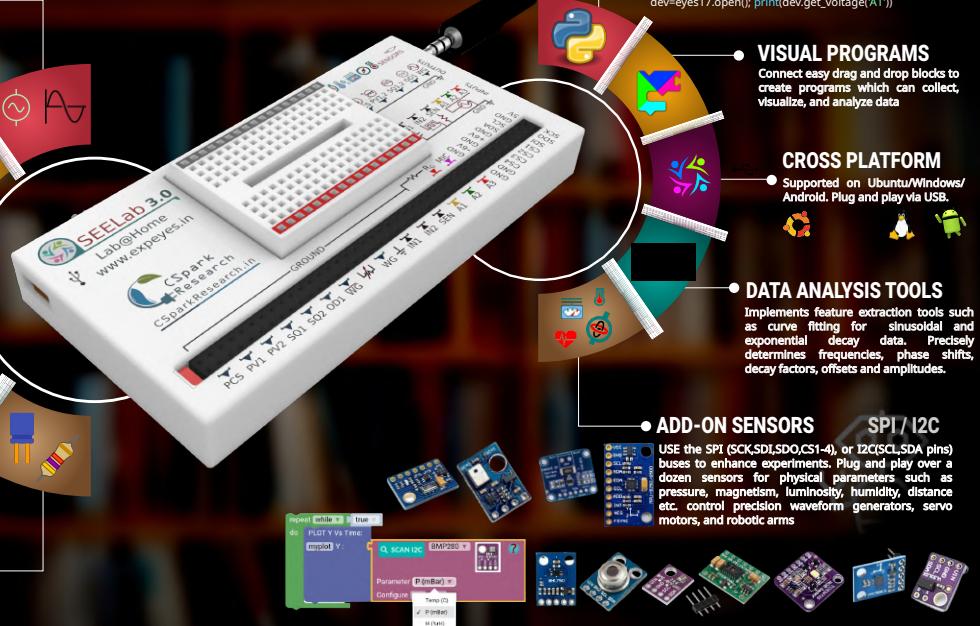
12 bit programmable outputs
+/-5V, PV2: +/-3 V, 5V Direct
power, +6V and -6V for powering

SQUARE WAVE

SQUARE WAVE SQ1 SQ2
0 to 5V Square wave outputs with adjustable frequency and duty cycle. 0.015Hz to 1MHz. Output Impedance 100Ω. Measure digital signal timings on TIN2/SEN2.

RC METER SEN INT

⚙ PIN DIAGRAMS AND FEATURES



OUTLINE

Basic Circuits

Mechanics

Electrical

Electronics

Acoustics

Sensors

Programming

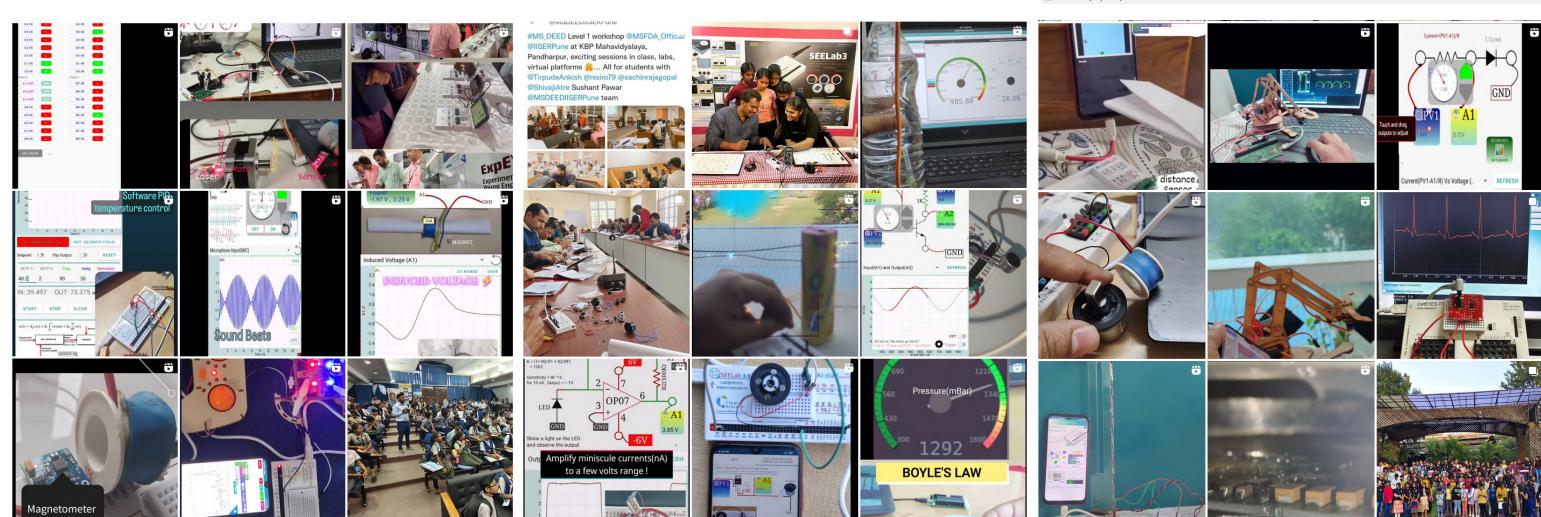
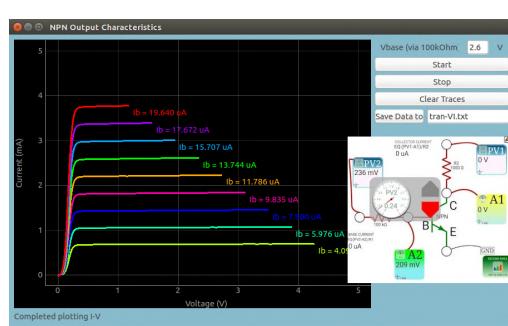
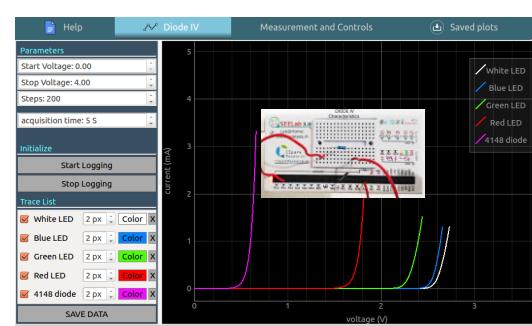
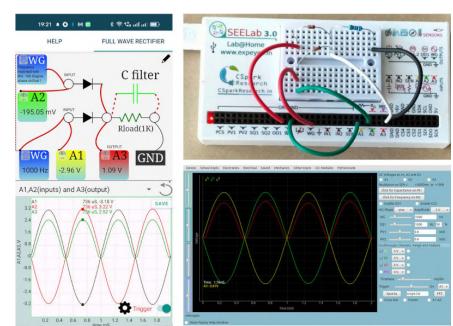
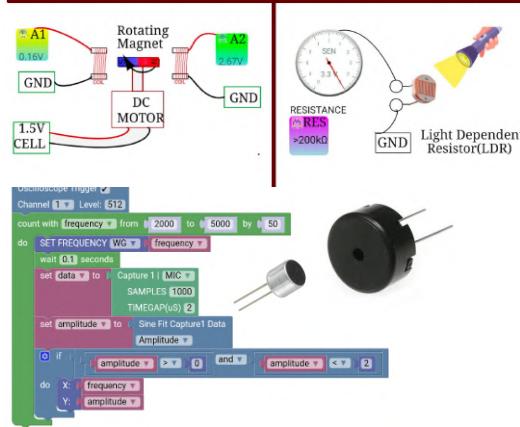
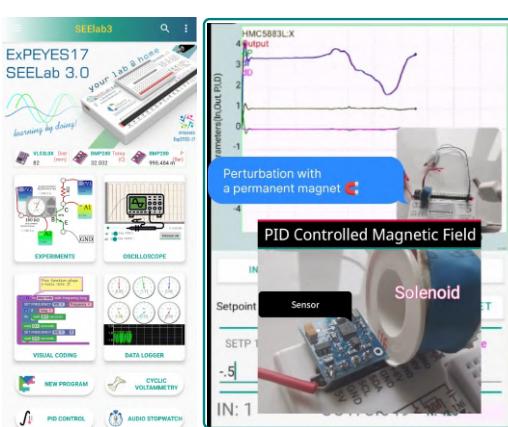
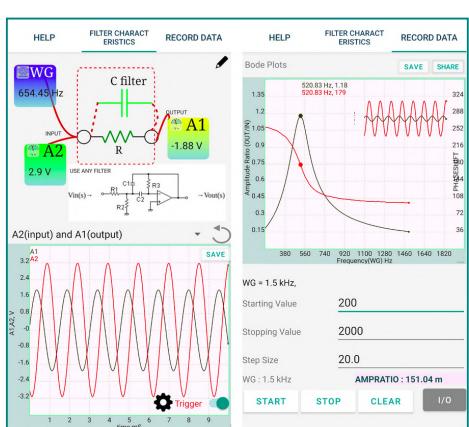
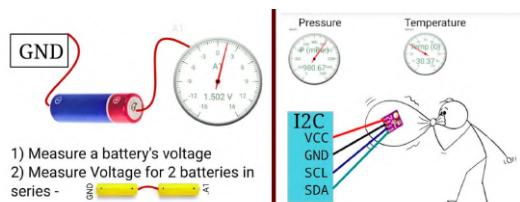
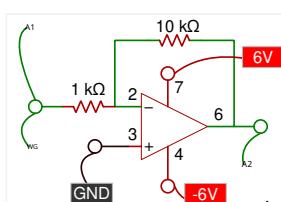
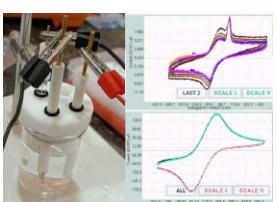
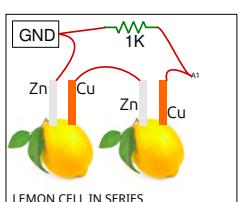
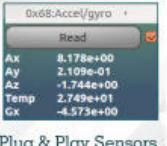
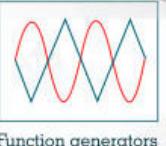
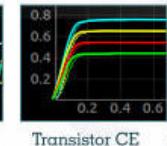
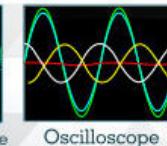
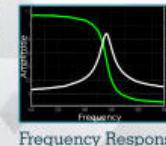
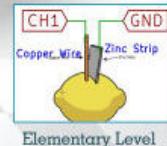
DAY 1

- + Introduction to test and measurement tools
 - + Electronic characterisation and plotting
 - + RC/LC Transient and Steady State Response
 - + Digitization of a simple pendulum
 - + EM Induction & AC generator. 3Phase demo
 - + Acoustics : Measurement of Speed of sound, interference, and fourier transforms.
 - + Add-on Sensors: Pressure, T, rH, Magnetism
 - + Introduction to KiCAD EDA circuit design
 - + Designing 3D printable parts with FreeCAD

DAY 2

- + Measure Gravity from time of flight (create your own setup)
 - + Modification of Flywheel experiment Plot S,V,A !
 - + Introduction to Programming : Python & Visual
 - + Introduction to Opamps: Amplifiers
 - + Using you phone's sensors for science experiments : acoustic stopwatch, gyro, luminosity sensor.
 - +Design and development of products!





CHIEF PATRON

Shri Ashish Vakil

Chairman - Sarvajanik Education Society

PATRON

Dr. Pruthul R. Desai

Principal, Sir P. T. Sarvajanik College of Science
(Autonomous)



CERTIFICATES will be issued and distributed to all the participants on the last day upon successfully completing all the sessions, and submitting the Feed-Back Form.

