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Product Name :	**Product Code :**
Electricity and electronic fundamental trainer	NLAB-ELECTRICALAB210001

Description :

Electricity and electronic fundamental trainer, component and circuit based PCB modules

Technical Specification :

Electricity and Electronics Fundamentals Trainer covering the concepts, theory and applications of basic electricity and electronics that are required for technicians. This comprehensive course is presented in a systematic way starting the student out at the beginning covering basic theory and measurements with meters.

Scope of Experiments :

- Electrical and Electronic symbols & schematic diagrams
- Electricity/Electronic safety
- Using the Multi meter
- Series and Parallel Resistance Circuits
- Voltage and Voltage Measurement

- Measurement and Control of DC
- Ohm's Law and the Series Circuit
- The Parallel Circuit
- Series-Parallel Circuits
- Kirchoff's Laws
- Thevenin's Theorem
- Power
- Electricity and Magnetism
- Alternating Current Measurement
- Capacitors
- Capacitive Reactance and Phase Measurement
- Inductance
- Series RL and RC Circuit Characteristics
- The Series Resonant Circuit
- Parallel Resonance
- Power in AC Circuits
- Filter Circuits
- Non linear Devices
- Semi conductor Diodes
- Diode Circuits
- Power Supply Circuits
- Junction Transistors
- Common Emitter Amplifier Characteristics
- The Emitter Follower Amplifier
- Advanced Transistor Amplifier Circuits
- Audio Amplifier Characteristics

- Differential Amplifier
- Field-Effect Transistors and Amplifiers
- Linear Integrated Circuits
- Op Amp Circuits
- Oscillators
- Multi vibrators
- 555 Timer
- Large-Scale IC Signal Generation
- Signal Control Circuits
- Solid-State Switches
- Digital IC Gate Circuits
- Analog-to-Digital Conversion
- Digital-to-Analog Conversion
- Digital IC Decoders

Specifications:

A. Base Station:

Student Base Station: This unit serves as the platform for carrying out the student experiments. Experiment modules are inserted into the base station and interconnected to the services provided by the base station through 2 mm sockets and test leads. The base station provides for all the primary needs of the experiment modules, and includes a variety of components such as the following:

1. Fixed regulated DC Power Supplies: +5V, +15V, -15V
2. Variable Regulated DC Power Supply 0 - 25V
3. Potentiometers: 4 units
4. Pulse Switches: 2 units
5. 8 bits LED display.

6. Toggle Switches: 5 spdt

7. Speaker: 2.25 inch, 8 ohm/0.25w

8. One set of 2 mm stackable test leads to perform all required inter-connections.

B. Set of PCB Board Experiment Modules:

The trainer comes with a complete set of
experimental board modules that closely follows the courseware. Each module consists of a high quality epoxy coated fiber glass printed circuit board with the electronic components mounted on to the surface. Each board is printed with a clearly laid out silk screened schematic circuit or component diagram. The experiment boards are designed to be very educational and to reinforce the link between the theoretical and practical aspects. All the components and connections (PCB tracks) in each circuit are clearly visible and can be associated with the schematic diagram

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