

Outline of Analog Electronics Lab

It is an introductory hardware experimental laboratory in which characteristic analysis of diodes, transistors, op-amp based amplifiers and oscillators are carried out. Students learn to design, build and debug the analog electronic circuits in hardware. Different experiments related to mainly two courses, Joy of Electronics & Communication and Analog Electronics, are performed in this laboratory.

Typical Equipment available in the Lab

Digital Storage Oscilloscopes (100 MHz)
Adaptable Power Supply
Function Generators
Function/Arbitrary Waveform Generator
Analog System Lab Kits
Analog Multimeter with accessories
Drilling machine with reversible switch
Double Ended Bench grinder 4562B
High Speed Drilling Machine (for PCBs)
Hand Held Digital Multimeter
Analog & Digital IC Testers
LCR meters
Computers :Dell 9010 (2 Nos)

Main features of this laboratory

1. Theme of the analog electronics lab is in line with the mission and vision of the ECE department.
2. This lab deals with various experiments and projects related to analog signal processing using discrete components and ICs.
3. A wide range of experiments from basic circuits such as rectifiers, voltage regulators etc. to advanced analog circuits such as oscillators, filters, and timer (IC 555) experiments etc. can be conducted efficiently.
4. Lab has the capacity to handle more than 35 students (at a time) with modern equipment available.
5. Lab is equipped with all safety measures such as fire extinguishers, Earthing Cable, Fire Safety Instruments, Electrical Fuse on each table and First Aid Kit.
6. Students have successfully completed novel hardware projects at UG and PG level associated with the analog electronics.
7. Many activities related to design, development and testing related to R&D and consultancy projects have been carried out in this lab.
8. The analog electronics lab also provides facilities to do test and measurements of various electronic circuits and embedded boards.
9. The hands-on activity in the lab provides motivation to students at all levels (UG/PG/PhD) to design and innovate hardware solutions to common problems and provides opportunity to start-ups to test their proof of concept design.

Scope of the laboratory:

The analog lab is developed to cater to the following activities of the department.

1. Run undergraduate laboratory courses like Joy of Electronics and Communication and Analog Electronics Lab.
2. Support hardware development related to UG, PG and PhD mini/major projects/research workshop.
3. Hardware development for R&D, Testing and Consultancy activities of the department.

Nature of Experiments that are performed in Joy of Electronics and Communication course:

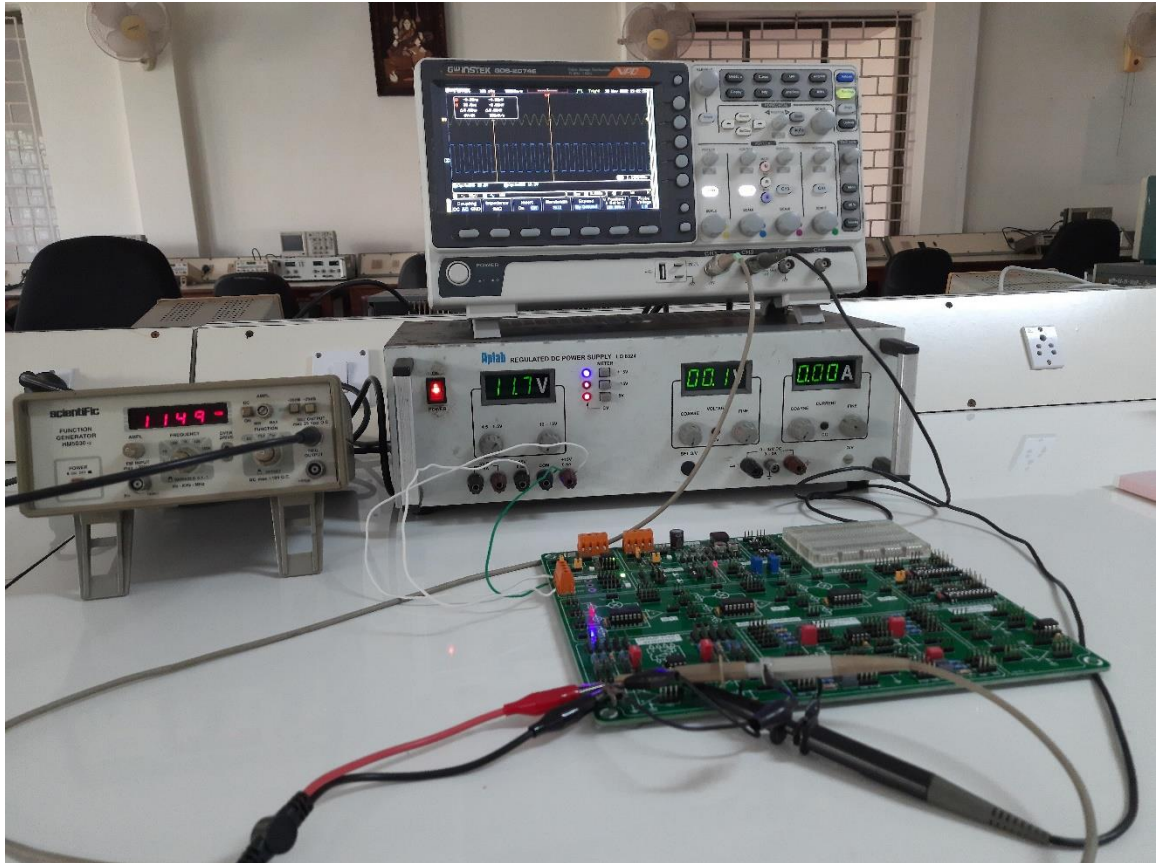
- Characteristics of diodes, rectifiers, basic amplifier circuit, Zener regulators, some of the basic circuits using opamps and 555 timer and circuits related to communication field.

Nature of Experiments that are performed in Analog Electronics lab course

- Diodes based logic gates, Rectifier circuits, Regulators, AC and Transient analysis of RC Circuits, Feedback concept and opamp based linear and non-linear applications

Images of Analog Electronics Lab





Research and Development/Consultancy work done in Analog Electronics Laboratory:

The following systems were developed in Analog Laboratory:

1. Automated Warning System for Unmanned Level Crossings



2. Muscle Energy Harvesting System



3. Electronic System for Radiofrequency Ablation

