BITS Pilani
Hyderabad Campus

Department of Electrical and Electronics Engineering

Microelectronic Circuits Lab

Introduction

- Microelectronics- It is an integrated circuit technology that is capable of producing millions of components on a small piece of silicon (known as silicon chip) whose area is in the order of 100 mm^2
- The primary example of integrated circuit is the microprocessor which can perform arithmetic, logic and memory functions on a single semiconductor chip

Scope of the Lab

- The purpose of this lab is to get familiar with the basic microelectronics devices and circuits and to study their DC and AC response.
- To learn how to use equipment such as trainer kit, power supplies, multi-meters, function generator, and the digital oscilloscope.

Courses to cater

- Microelectronic Circuits (EEE/ECE/INSTR F244)
- Electrical and Electronic Circuits Laboratory EEE F246)

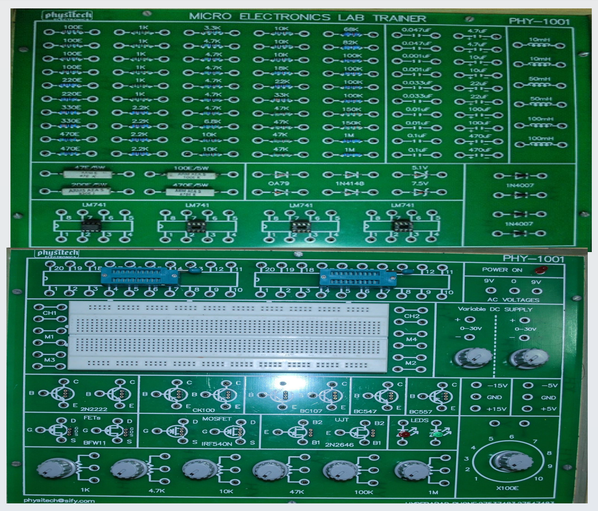
Software

LTspice

Hardware

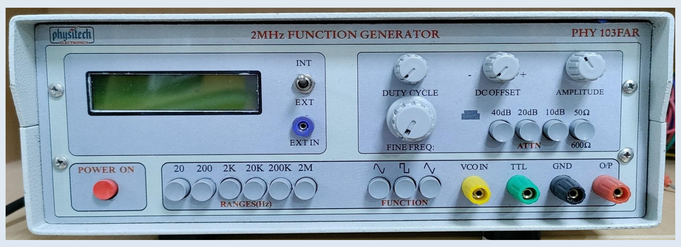
Micro Electronics Lab Trainer kit
Digital Storage Oscilloscope
Function Generator, 2 MHz
Multi Range Digital Multimeter
Digital Multimeter

Lab Equipment

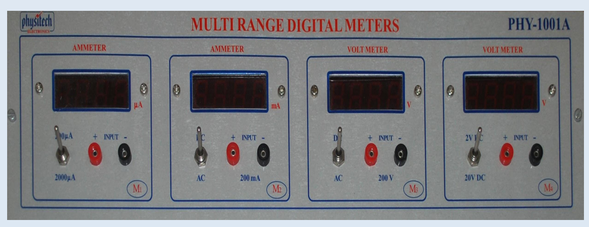


Microelectronics Lab Trainer

Digital Storage Oscilloscope -100MHz



Function Generator - 2 MHz



Multi Range Digital Multimeter

Faculty Coordinator

- Dr. Parikshit Sahatiya

Other Faculty Users

- Dr Syed Ershad Ahmed
- Dr. Joyjit Mukherjee

Research Scholars

- Mr. Adepu Vivek
- Mr. Samit Kumar Ghosh
- Mr. PN Sidhartha
- Ms. Jisy N K

Lab Technician

- Mr. Ramesh P

List of experiments

- Introduction to Microelectronic circuits Lab
- P-N junction Diode Characteristics and a Few Applications
- Performance Study of Regulated DC Power Supply
- DC Characteristics of MOSFET in CS Configuration
- Frequency Response of Common Source MOSFET Amplifier
- Common Emitter (BJT) Transistor Characteristics
- Introduction to Circuit Simulation Using LTspice
- Common Base and Common Emitter Characteristics LTspice
- Common Emitter Amplifier Design using LTspice
- Design Regulated Power Supply & Op-amp Circuits using LTspice

Applications

- Electronic devices
- Integrated Circuits
- Electronic Displays
- Photonics
- Solar Cells
- MEMS
- Optoelectronics
- VLSI
- Sensors
- Internet of Things (IoT)

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