

Electronics Laboratory



The Electronics Lab exposes students to electronics devices and their applications.

In Electronics I Lab students learn how to characterize diodes and transistors (BJT, MOSFET) by measuring their I-V characteristic curves and computing their model parameters. Applications such as diode rectifiers, Zener regulators, transistor digital logic circuits and amplifiers are investigated using experimental measurement and computer simulation.

In Electronics II Lab students investigate amplifier frequency response and bandwidth, feedback amplifier, opamp characteristics and applications, analog filters and signal generators. In addition, to experimental measurement procedures and use of hardware instrumentation, students learn important circuit design skills, data analysis, team work and communication skills.

Experiments

Electronics I

- Diode Characteristics
- Diode Rectifier & Zener Regulator
- BJT & MOSFET Characteristics
- Transistor Digital Circuits
- Transistor single-stage and multi-stage amplifier
- Diode and Transistor Circuit simulations

Electronics II

- Amplifier Frequency Response
- Current Mirrors & Diff. Amplifier
- Amplifier Output stages
- Opamp Characteristics & Applications
- Feedback Amplifiers
- Analog Filters
- Signal Generators: Oscillator, Timer
- Circuit simulations



Major Equipment

- NI Elvis II+ board
- TG550 Function Generators
- Tektronix TDS2012C 100 MHz 1GS/s 2-channel Oscilloscopes
- Tektronix TDS2014C 100 MHz 1GS/s 4-channel Oscilloscopes
- Tektronix PWS2323 DC Power Supply
- Escort EDM-169S Handheld Digital Multimeter
- Electron B1180-WS Workstation with in-built Power Supply
- Electron Experiment Modules
 - B1110 - BASIC ELECTRONIC TRAINER
 - B1112 - OPERATIONAL AMPLIFIER TRAINER
 - B1115 - ADVANCED ELECTRONIC TRAINER
 - B1130 - DIGITAL LOGIC TRAINER

