

Electronics Lab -EE 342:



Primary Functions of Lab

The Electronics Lab is used by students to design and test Electronic Circuits. Topics related to diode characteristic, diode applications, BJT characteristic, common emitter amplifier, JFET amplifier and op-amp amplifier will be covered. The experiments that will be covered in the lab are:

1. Diode Characteristics:

The purpose of this lab is to study the characteristics of the diode. Some of the characteristics that will be investigated are the I-V curve. The Zener diode characteristics will also be studied

2. Diode Applications: Rectifiers, Filters:

The purpose of this lab is to study the applications of the diode. In this lab students will study how the diodes used as rectifier.

3. Diode Applications: Clipper, Clamper:

The purpose of this lab is to study the applications of the diode. In this lab students will study how the diodes used as clipper and clamper.

4. BJT Characteristics and D.C Biasing:

The purpose of this lab is to study the characteristics of the BJT. Some of the characteristics that will be investigated are the DC-Load line. DC analysis of NPN and PNP transistor will also be studied

5. The Common Emitter Amplifier:

Study the DC and AC analysis of common emitter amplifier.

6. JFET Amplifier:

The purpose of this lab is to study the characteristics of the JFET. DC and AC analysis of JFET will be studied

7. Frequency Response:

The purpose of this lab is to do the frequency response analysis of a circuit by plotting its gain, Output/Input against a frequency scale over which the circuit or system is expected to operate.





8. Op-Amp. Applications: Inverting Amp, Non inverting Amp ,Summer :

The purpose of this lab is to study the applications of the op-amp. In this lab students will study how the op-amp used as inverting, non-inverting and summing amplifier.

9. Op-Amp. Applications:, Integrator Differentiator and Comparator:

The purpose of this lab is to study the applications of the op-amp. In this lab students will study how the op-amp used as integrator, differentiator and comparator.

Equipment and Highlights

Device	Picture	Description
<p style="text-align: center;">FUNCTION GENERATOR</p>		<p>MODEL:4011A SWEEP FUNCTION GENERATOR</p> <ul style="list-style-type: none"> • 5 MHz Function Generator • Digital Display Sine. Square. Triangle output • Coarse and Fine tuning • 4 digit LED display • Variable duty cycle • Variable DC offset.
<p style="text-align: center;">DIGITAL MULTIMETER,</p>		<p>ODEL TTI1604,FARNELL-TTI/U.K.</p> <ul style="list-style-type: none"> • Bench-top DMM with a large and bright LED display. • It offers 4¾ digit scale length • True RMS ac measurements • Basic accuracy of 0.08% • Measure voltage, current, resistance, capacitance and inductance. •
<p style="text-align: center;">POWER SUPPLY</p>		<p>MODEL PS2332-025(GERMANY)</p> <ul style="list-style-type: none"> • output power 80W, 160W, 2x80W, 2x160W • output voltages 0-16V, 0-32V • output currents of 2.5A - 20A • safety output sockets •
<p style="text-align: center;">Oscilloscope</p>		<p>Model :HAMEG HM507</p> <ul style="list-style-type: none"> • Vertical Sensitivity 5mV/div to 20V/div \pm 3% • Operating modes: CH1, \pmCH2, CH1 + CH2, ALT, CHOP, Add, Subtract • Inputs: a.c.,d.c.,gnd • Analogue & Digital Mode:T, ΔT, 1/Δt (freq), gain, rise time, ratio x, ratio Y, V, to GND, phase angle

