



EE324-Electronic Devices & Application Laboratory (Required Course)

Code and Name: EE324 Electronic Devices & Application Laboratory

Credit Hours: 1 (Practical:2)

Textbook:

- Lab manual Given by University.

Other References:

- Microelectronics: Circuit Analysis and Design, D. A. Neamen, Fourth Edition, McGraw-Hill, 2010.
- IEEE journals in Electronic devices.

Course Description:

This course is offered for the students to get hands on the experiments for the theory they studied in the electronic devices and applications course. To verify the theoretical knowledge of Operational amplifier Applications and transistor applications are focused. This course includes op-amp Comparators, inverting and non-inverting Amplifiers, integrators, differentiators, LPF, HPF, Oscillators, Schmitt Triggers, BJT amplifier frequency response, single and multiple stage etc.

Pre-requisites: EE 321 and EE 323.

Co-requisites: None.

Course Learning Outcomes:

With relation to ABET Student Outcomes (SOs: 1-7)

1. Recognize Special Symbols and characteristics used for the Devices such as Bipolar Junction Transistor, Operational Amplifier with their pin configuration. (1)
2. List properties of OPAMP and BJT. Recognize Inverting & non-Inverting Amplifier Configurations. (1)
3. Lab Procedure. (6)
4. Design and demonstrate Frequency Response of BJT & operational amplifiers. (2)
5. Design and demonstrate applications of op-amp like Comparator, integrator, Differentiator Circuits. (2)
6. Data Documentation. (3)

Topics to be covered:

- Introduction to EDA Lab, Introduction to Components, Devices, etc.
- Experiment 1: Transistor CC Amplifier.
- Experiment 2: Frequency Response of BJT Amplifier.
- Experiment 3: Multistage Amplifier Frequency Response.
- Experiment 4: Op-Amp Comparators a.) Inverting & (2) Non-inverting.
- Experiment 5: Study of Op-Amps Inverting Amplifier.
- Experiment 6: Study of Non-inverting Amplifiers.
- Experiment 7: Op-amp Integrator.
- Experiment 8: Op-Amp Differential.
- Experiment 9: Low-Pass Active Filter with single & double stages.
- Experiment 10: High-Pass Active Filter with single & double stages.
- Experiment 11: The RC Phase Shift Oscillator.
- Experiment 12: Schmitt Trigger.

Grading Policy: Check

The grading for the course are 60% coursework and 40% Final Exam. The coursework consists of one Midterm Exam, where the midterm exam is worth 20%. It also includes quizzes and lab reports for the remaining 40% that is modified by the course instructor.

