Course No.	Course Name	L-T-P-Credits	Year of Introduction
BM231	ELECTRONIC DEVICES & CIRCUITS LAB	0-0-3-1	2016

Prerequisite : BM207 Design of electronic circuits

Course Objectives

To familiarize students with the design of electronic circuits using passive and active components and make them understand the capabilities and applications of such circuits.

List of Exercises/ Experiments (Minimum of 12 mandatory)

1. Characteristics of diodes (Si and Ge diodes, zener diode & LED)
2. Rectifying circuits
   i) HW rectifier ii) Centre tapped FW rectifier iii) FW Bridge rectifier
3. Filter circuits - Capacitor filter, inductor filter and Pi section filter
4. Clipping circuits
5. Clamping circuits
6. Characteristics of transistors
7. Biasing of BJT – Fixed and voltage divider biasing
8. Zener voltage regulator
9. Series voltage regulator using transistors.
10. Design of single and dual power supplies.
11. Frequency responses of RC low pass & high pass filters
12. RC differentiating and integrating circuits.
13. Characteristics of FET
14. Biasing of FET – Fixed and voltage divider biasing
15. Series and parallel resonant circuits
16. Switch circuits using BJTs
17. Sweep circuits - Simple transistor and bootstrap sweep circuits
18. RC coupled amplifiers using BJT with and without feedback - gain, frequency response & bandwidth.

Equipments needed: Bread boards, Multimeters, Fixed and Variable DC power supplies, CROs, Function Generators, Electronics Circuit Simulation software like LTspice

Expected Outcome

At the end of the course the student will be able to

- Test components and to learn the characteristics of Si & Ge diodes, zener diode, LED, BJT and FET
- Learn to design and analyze circuits of rectifiers, filters, regulators and power supplies
- Set up biasing circuits for BJT and FET to fix the Q-point and also the amplifier circuits
- Design, analyze and find the applications of simple circuits using active components
- Tabulate the results and document them properly

Text Book:

R E Boylstead and L Nashelsky: Electronic Devices and Circuit Theory, 9/e, Pearson Education