

3/4 B.Tech. SECOND SEMESTER

EE6L1 POWER ELECTRONICS & DRIVES LAB Credits: 2

Practical: 3 periods/week

Internal assessment: 25 marks

Tutorial: 0 period /week

Semester end examination: 50marks

Course Objectives:

To make the students to design triggering circuits of SCR.

To introduce power electronics components from which the characteristics of SCR, TRIAC, IGBT and MOSFET are obtained.

To perform the experiments on various converters.

Learning outcomes:

Upon completing this lab students must be able to correlate theoretical and practical analysis of AC-AC, DC-AC converters and also converter fed to AC&DC drives. Also analyze the characteristics of MOSFET, IGBT, SCR and SCR firing CKTs, this commutation techniques.

Any 10 of the following Experiments are to be conducted

1. Study of Characteristics of SCR, MOSFET & IGBT
2. Gate firing circuits of SCR's
3. Forced Commutation circuits (Class A, Class B, Class C, Class D & Class E).
4. Single Phase fully controlled bridge converter with R and RL loads
5. Single Phase AC Voltage Controller with R and RL loads
6. Single Phase Cyclo-converter with R and RL loads
7. Single Phase bridge inverter with R and RL loads
8. Single Phase series inverter with R and RL loads
9. Single Phase Parallel, inverter with R and RL loads.

10. Single Phase dual converter with RL loads
11. Three Phase half controlled bridge converter with RL-Load
12. IGBT based four quadrant Chopper Controlled DC Motor drive
13. VSI fed three phase induction motor drive
14. Dual converter fed DC motor drive