POWER ELECTRONICS AND DRIVES LABORATORY-I

Course Code: 13EE2209

L	P	C
0	3	2

Pre requisites: Power Electronics, Power Electronics & Drives

Course Educational Objectives:

The lab is intended for the students to get hands on experience in understanding power semiconductor devices, converter circuits and drives through simulation and experimentation.

Course Outcomes:

At the end of the course, the students will be able to design & understand the performance of various power electronic converter circuits and drives for various industrial applications.

LIST OF EXPERIMENTS
(ANY TEN EXPERIMENTS TO BE PERFORMED)

1. SPICE Simulation of Three phase full converter using RL E Load.
2. SPICE Simulation of three phase AC Voltage controller using RL load.
3. SPICE Simulation of Three phase inverter with Sinusoidal PWM control for R-Load.
4. SPICE Simulation of single phase current source inverter with RL Load.
5. SPICE Simulation of dc-dc converters.
6. SPICE Simulation of a resonant converter.
7. Performance and operation of 3- phase Semi-Converter with R & R-L load
8. Performance and operation of 3- phase Full-Converter with R & R-L load..

9. Performance & Operation of a four quadrant Chopper fed D.C. Drive
10. Performance & Operation of a 3-phase A.C. Voltage controller with motor load.

11 .Single Phase PWM Inverter with R & R-L load
12. Operation of 3-phase PWM Inverter with R & R-L load.
13 .DC Series motor controller using Jones Chopper.
14. Speed control of 1-Phase Induction Motor using cycloconverter.

Textbooks:

1. Ned Mohan, Tore M. Undelan and William P. Robbins, "*Power Electronics*", John Wiley & Sons, 2007.

2. Md. H. Rashid, "*Power Electronics*", Pearson Education, Third Edition, 2008.

3. Bimal K. Bose, "*Modern Power Electronics and AC Drives*", Prentice-hall Of India Pvt. Ltd,2008.

4. Rashid, M., "*Simulation of Power Electronic Circuits usingPSPICE*", PHI, 2006.