Course Name Power Electronics Laboratory

Course Code EE694

Course Credit 2

Contact Hour 3L

Prerequisite

Course Objective

The objectives of this course are

1. To prepare students to perform the analysis of any power electronics circuit.
2. To study of the characteristics of different power electronics devices and how it's work.
3. Familiar with PSIM Software to study of the operation of different power electronics converter.
4. Using PSIM Software plot different circuit wave response and also find out the average value, peak value and RMS value of different voltages & currents.

Course Outcome

At the end of this course

1. The skill to analyze the response of any power electronics devices.
2. The ability to troubleshoot the operation of an power electronics circuit.
3. The ability to select suitable power electronic devices for a given application.
4. The ability to know how to control and convert output signal as per requirements.
5. The ability to construct any power electronics circuits as needed in operation.

CO Mapping with departmental POs

H: High, M: Medium, L: Low

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	H			L								
CO 2		L		M								
CO 3	M	L		M					L			
CO 4	M			M					L			
CO 5	M	L		M								

Course Content

1. Study of the characteristics of an SCR.
2. Study of the characteristics of a TRIAC
3. Study of different triggering circuits of an SCR.
4. Study of the operation of a single phase full controlled bridge converter with R and R-L load.
5. Study of performance of single phase half controlled symmetrical and asymmetrical bridge converters.
6. Study of performance of step down chopper with R and R-L load.
7. Study of performance of single phase controlled converter with and without source inductance (simulation)
8. Study of performance of step up and step down chopper with MOSFET, IGBT and GTO as switch (simulation).
9. Study of performance of single phase half controlled symmetrical and asymmetrical bridge

converter. (simulation)

10. Study of performance of three phase controlled converter with R & R-L load (simulation)
11. Study of performance of PWM bridge inverter using MOSFET as switch with R and R-L load. (simulation)