III Year-II Semester		L	T	P	C
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POWER ELECTRONICS LAB (R1632026)

Prerequisite Course:

Power Electronics

Course Description and Objectives:

To analyze the performance of single–phase and three–phase full–wave bridge converters, single–phase dual converter with both resistive and inductive loads.

1. To study the characteristics of various power electronic devices and analyze firing circuits and commutation circuits of SCR.
2. To analyze the performance of single–phase and three–phase full–wave bridge converters with both resistive and inductive loads.
3. To understand the operation of AC voltage regulator with resistive and inductive loads.
4. To understand the working of Buck converter, Boost converter and inverters.

CourseOutcomes:

Upon completion of the course, the student will be able to achieve the following outcomes.

Cos	CourseOutcomes	POs
1	Able to study the characteristics of various power electronic devices and analyze firing circuits and commutation circuits of SCR.	4
2	Able to analyze the performance of single–phase and three–phase full–wave bridge converters, single–phase dual converter with both resistive and inductive loads.	5
3	Able to understand the operation of AC voltage controller and cyclo converter with resistive and inductive loads.	4
4	Able to understand the working of Buck converter, Boost converter, single–phase bridge inverter and PWM inverter.	4

Syllabus:

Any 10 of the Following Experiments are to be conducted

1. Study of Characteristics of SCR, MOSFET & IGBT
2. Gate firing circuits for SCR's
3. Single -Phase Half controlled converter with R and RL load
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 dual converter with RL loads
9. Three -Phase half controlled bridge converter with RL load.
10. Three- Phase full converter with RL–load.
11. DC–DC buck converter.
12. DC–DC boost converter.
13. Single -phase PWM inverter.
14. Single -phase diode bridge rectifier with R load and capacitance filter.
15. Forced commutation circuits(Class A, Class B, Class C, Class D and Class E)