Name of Faculty : Mr. Prankit Gupta
Discipline : Electrical Engg.
Semester : 5th
Subject : IECD

Lesson Plan Duration : 15 Weeks

**Work Load (Lecture/Practical)per week(in hours): Lectures-03,Practicals-04

Week	Day	Theory Topic/ Assignment/ Test	No.	Practical
1	1	Unit-I Introduction to SCR	1	To draw V-I characteristics of an SCR
	2	Construction and working principles of an SCR		
	3	Characteristics of SCR, Two transistor analogy		
2	1	SCR specifications and rating	2	To draw V-I characteristics of a TRIAC
	2	Construction, working principles and V-I characteristics of DIAC, TRIAC and QUADRIAC		
	3	Basic idea about the selection of heat sinks for SCR and TRIACS		
3	1	Methods of triggering a Thyristor.	3	To draw V-I characteristics of a DIAC
	2	Study of triggering circuits		
	3	UJT, its Construction, working principles and V-I characteristics, UJT as relaxation oscillator		
4	1	Commutation of Thyristors	4	Revision/File checking
	2	Series and parallel operation of Thyristors		
	3	Applications of SCR, TRIACS and Quadriac, dv/dt and di/dt protection of SCR		
5	1	Assignment/Class test of 1st unit	5	To draw uni-junction transistor characteristics
	2	Revision/checking/Problems solutions		
	3	Unit2: Introduction to Controlled Rectifiers, Single phase half wave controlled rectifier with resistive load		
6	1	With Inductive load and freewheeling diode	6	Observe the output wave of an UJT relaxation oscillator
	2	Single phase half controlled full wave rectifier		
	3	Single phase fully controlled full wave rectifier bridge, Single phase full wave Centre tapped rectifier		
7	1	Three phase full wave half controlled bridge rectifier	7	Mid- term viva-voice/file checking
	2	Three phase full wave fully controlled bridge rectifier		

	3	Assignment/Class test of 1st unit, Revision/checking/Problems solutions		checking
8	1	Unit3: Introduction to Inverters, Choppers, Dual Converters and Cyclo Converters,	8	To observe the output waveshape on CRO of single phase half controlled full wave rectifier
	2	Working principles and application of VSI, Working principles and application of CSI		
	3	Choppers-introduction, types of choppers and their working principles and applications		
9	1	Class A,B,C,D and E Chopper	9	Fan speed regulator using TRIAC
	2	Dual converters-introduction, working principles and circuit applications		
	3	Cyclo-converters- introduction		
10	1	types, working principles and applications	10	Speed-control of a DC shunt motor or universal
	2	Revision/checking/Problems solutions		
	3	Unit4:Thyristor Control of Electric Drives		
11	1	DC drives control	11	To study the construction of battery charger using thyristor
	2	Half wave drives,Full wave drives		
	3	Chopper drives		
12	1	AC drives control,Phase control	12	To observe the output waveshape on CRO of single phase full
	2	Variable frequency a.c. drives		
	3	Constant V/F application		
13	1	Voltage controlled inverter drives	13	Illumination control circuit using SCR/TRIAC and observe the waveshape across the
	2	Constant current inverter drives		
	3	Cyclo convertors controlled AC drives, Slip control AC drives		
14	1	Problem solution/ test check	14	Testing and installation of UPS
	2	Unit5: Uninterrupted Power Supplies		
	3	UPS, UPS online, off line		
15	1	Stabilizers, SMPS	15	Revision/File checking
	2	Storage devices (batteries) and their maintenance		
	3	Revision of important topics		
16	1	Assignment / Class test	16	Internal Practical
	2	Problem solution/ test check		
	3	Revision/Review/Test of old HSBTE Papers		