Name of Faculty: Suresh Rani

Discipline: Electronics & Communication Engg.

Semester: 4th

Subject: Power Electronics

Lesson Plan Duration: 15weeks

Work Load (Lecture /Practical) per week in hours: Lecture: 3 Practical: 4

Week	Theory		Date of Execution	Practical		Date of Execution
	Lecture Day	Topic (Including assignment/test)		Practical Day	Topic	
1st	1st	Introduction to thyristors and other Power Electronics Devices& role of power electronics		1st (G1)	Introduction	
	2nd	Construction, Working principle of SCR		2nd (G2)	Introduction	
	3rd	Two transistor analogy of SCR				
2nd	4th	V-I characteristics of SCR		3rd (G1)	To plot V-I characteristic of an SCR	
	5th	SCR specifications and ratings		4th (G2)	To plot V-I characteristic of an SCR	
	6th	SCR protection (di/dt & dv/dt)				
3rd	7th	Different methods of SCR triggering.		5th (G1)	Revision	
	8th	Different commutation circuits for SCR		6th (G2)	Revision	
	9th	Construction and working principle of DIAC and V-I characteristics			Revision	
4th	10th	Construction and working principle of TRIAC and V-I characteristics		7th (G1)	Revision	
	11th	Construction, working principle of UJT, V-I characteristics of UJT		8th (G2)	Revision	
	12th	UJT as relaxation oscillator				
5th	13th	Basic idea about the selection of Heat sink for thyristors		9th (G1)	To plot V-I characteristics of TRIAC	

	14th	Light intensity control&speed control of universal motors		10th (G2)	To plot V-I characteristics of TRIAC	
	15th	Fan regulator, battery charger				
6th	16th	Single phase half wave controlledrectifier with load (R, R-L)		11th (G1)	To plot V-I characteristics of UJT	
	17th	Single phase half controlled full wave rectifier with load (R, R-L)		12th (G2)	To plot V-I characteristics of UJT	
	18th	Single phase Fully controlled full wave bridge rectifier				
7th	19th	Single phase full wave centre tap rectifier		13th (G1)	To plot V-I characteristics of DIAC	
	20th	Principle of operation of basic inverter circuits, concepts of duty cycle		14th (G2)	To plot V-I characteristics of DIAC	
	21st	Revision				
8th	22nd	series Inverter and applications		15th (G1)	Study of UJT relaxation oscillator & observe different waveforms	
	23rd	Parallel Inverters and their applications		16th (G2)	Study of UJT relaxation oscillator & observe different waveforms	
	24th	Introduction to choppers &types of choppers.				
9th	25th	Class A& Class B Choppers		17th (G1)	To observe wave shapes at relevant points of single-phase half wave controlled rectifier and effect of change of firing angle.	
	26th	Class C& Class D Choppers		18th (G2)	To observe wave shapes at relevant points of single-phase half wave controlled rectifier and effect of change of firing angle.	

	27th	Step up and step down choppers				
10th	28th	Introduction to Dual Converters &Cycloconverters		19th (G1)	Revision	
	29th	Types and basic working principle of dual converters and their application		20th (G2)	Revision	
	30th	Types and basic working principle of cyclo-converters and their applications				
11th	31st	Introduction to thyristorised control of electric drives		21st (G1)	To observe wave shapes & measurementof voltage at relevant points in TRIAC based AC phase control circuit	
	32nd	DC drive control- Half wave drives		22nd (G2)	To observe wave shapes & measurementof voltage at relevant points in TRIAC based AC phase control circuit	
	33rd	DC drive control- Full wave drives				
12th	34th	DC drive control- Chopper drives (Speed control of DC motor using choppers)		23rd (G1)	Revision	
	35th	Continuation of DC drive control- Chopper drives (Speed control of DC motor using choppers)		24th (G2)	Revision	
	36th	Introduction to AC drive control				
13th	37th	AC drive control-- Phase control		25th (G1)	To observe output waveshape in a circuitfor single phase full wave controlled rectifier	
	38th	AC drive control- Constant V/F operation		26th (G2)	To observe output waveshape in a circuitfor single phase full wave controlled rectifier	
	39th	AC drive control- Cycloconverter/Inverter drives				
14th	40th	Introduction to UPS		27th (G1)	Revision	
	41st	On-line UPS & its specifications		28th (G2)	Revision	
	42nd	Off-line UPS & its specifications				
15th	43rd	Concept of high voltage DC transmission		29th (G1)	To study Installation of UPS system and routine maintenance of batteries.	
	44th	Classification of batteries		30th (G2)	To study Installation of UPS system and routine maintenance of batteries.	
	45th	Revision				