

Government College of Engineering, Salem - 11
Department of Electrical and Electronics Engineering
M.E. - Power Electronics and Drive
COs - POs and PSO Mapping
Course Articulation Matrix – 18 Regulation

Semester - I																
18PEC11-Power Semiconductor Devices and Components																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Remember the overview of power semiconductor switches	1	3	1	1	1	1	3	1	1	1	1	-	-	-	-
2	Analyze the thermal requirements of power semiconductor devices	1	1	3	3	1	1	3	1	1	2	1	-	-	-	-
3	Understand the basic concepts of ZVS and ZCS	1	1	2	2	2	1	1	1	1	3	1	-	-	-	-
4	Evaluate the design aspects of various magnetic components according to specific requirements.	2	3	2	3	3	1	2	2	1	2	2	-	-	-	-
5	Understand the design concepts of circuit elements	2	2	3	2	3	1	2	3	1	2	2	-	-	-	-
Average		1.4	2	2.2	2.2	2	1	2.2	1.8	1	2	1.4	-	-	-	-

Semester – I																
18PEC12-Analysis of Power Converters																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Get expertise in the working modes and operation of Power converters.	3	3	1	1	1	1	2	3	1	1	1	-	-	-	-
2	Select and design dc-dc converter topologies for a broad range of power conversion applications.	2	2	2	1	2	1	2	3	1	1	2	-	-	-	-
3	Design single phase and three phase inverters	1	2	1	3	2	1	1	1	1	2	1	-	-	-	-
4	Formulate and design the inverters for generic loads and machine loads.	1	1	1	2	1	1	1	1	2	1	1	-	-	-	-
5	Acquire knowledge on multilevel inverters and modulation techniques	1	1	1	1	1	1	1	2	1	1	1	-	-	-	-
Average		1.6	1.8	1.2	1.6	1.4	1	1.4	2	1.2	1.2	1.2	-	-	-	-

Semester – I																
18PEC13-Advanced Power Electronics Laboratory - I																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Model power electronics converter/Inverter in software	1	3	1	3	3	1	2	3	1	1	1	-	-	-	-
2	Simulate any power electronic converter/Inverter	1	1	2	1	3	1	2	3	1	1	1	-	-	-	-
3	Obtain numerical solutions of partial, differential and integral equations	1	2	1	3	2	1	1	1	1	1	2	-	-	-	-
4	Implement single phase full converter for any type of R and RL load	1	1	1	3	3	1	2	2	1	2	1	-	-	-	-
5	Implement single phase full converter for dc motors	1	1	1	1	3	1	1	2	2	1	1	-	-	-	-
Average		1	1.6	1.2	2.2	2.8	1	1.6	2.2	1.2	1.2	1.2	-	-	-	-

Semester – I

18PEC14-Advanced Digital Control Laboratory

Course Outcomes		Program Outcomes												Program Specific Outcomes			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	
1	Understand the peripheral requirements for controlling the circuit	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-
2	Understand and implement the configurations of various required peripherals	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-
3	Write coding to implement the devised control technique	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-
4	Understand and implement the measurement principles through digital techniques	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-
5	Develop algorithms for implementation of controls and implement isolation techniques for power control	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-
Average		1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-

Semester – I																
18MLC01-Research Methodology and IPR																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand research problem formulation.	-	-	-	-	1	1	1	1	1	2	1	-	-	-	-
2	Analyze research-related information	-	-	-	-	3	1	1	1	1	1	1	-	-	-	-
3	Follow research ethics	-	-	-	-	1	1	1	1	3	1	1	-	-	-	-
4	Understand that today's world is controlled by Computer, Information Technology, but tomorrow world will be ruled by ideas, concept, and creativity.	-	-	-	-	1	3	1	1	1	1	1	-	-	-	-
5	Understand that IPR protection provides an incentive to inventors for further research work and investment in R & D, which leads to the creation of new and better products, and in turn brings about, economic growth and social benefits.	-	-	-	-	1	3	1	1	1	2	2	-	-	-	-
Average		-	-	-	-	1.4	1.8	1	1	1.4	1.4	1.2	-	-	-	-

Semester - II																
18PEC21-Modelling and Analysis of Electrical Machines																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Acquire knowledge about the DC machines and AC machines and their magnetic circuits.	2	1	1	1	3	1	3	1	1	1	1	-	-	-	-
2	develop mathematical model of AC & DC machines and perform transient analysis on them.	2	1	3	3	1	1	3	1	1	1	1	-	-	-	-
3	Understand the different types of reference frame theories and transformation relationships.	2	2	2	2	3	1	3	1	1	3	1	-	-	-	-
4	Analyze the steady state and dynamic operation of three phase induction motor using transformation theory based mathematical Modelling and Special machines.	2	3	2	3	3	1	2	2	1	2	1	-	-	-	-
5	Select strategies to control the torque for a given application.	2	2	3	3	3	1	2	1	1	2	2	-	-	-	-
Average		2	1.8	2.2	2.4	2.6	1	2.6	1.2	1	1.8	1.2	-	-	-	-

Semester - II																
18PEC22-Modern Electrical Drives																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand selection of drives for industries.	1	1	1	1	2	1	2	1	2	1	2	-	-	-	-
2	Analyse various characteristics of series and separately excited DC motor with single and three phase converters.	1	3	3	2	2	1	2	2	1	1	1	-	-	-	-
3	Explain about different conventional speed control methods for induction motors.	1	1	1	2	2	1	1	2	1	1	1	-	-	-	-
4	Explain about direct and indirect methods of field oriented control and direct Torque Control scheme for Induction motor.	1	1	2	2	2	1	2	2	1	1	1	-	-	-	-
5	Formulate the control schemes for synchronous motor drives.	1	2	3	2	3	1	2	2	1	1	1	-	-	-	-
Average		1	1.6	2	1.8	2.2	1	1.8	1.8	1.2	1	1.2	-	-	-	-

Semester - II																
18PEC23-Advanced Power Electronics Laboratory II																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Implement ac voltage controller	2	1	3	3	3	1	2	3	2	1	2	-	-	-	-
2	Obtain the performance of any type of converter	2	3	3	1	3	1	2	3	1	1	1	-	-	-	-
3	Analyse the performance of single phase and three phase inverter	2	3	1	1	2	1	1	1	1	1	1	-	-	-	-
4	Implement DC-DC converter	1	1	3	3	3	1	2	3	1	1	1	-	-	-	-
5	Analyse the performance of resonant converter	2	3	3	1	3	1	2	3	1	1	1	-	-	-	-
Average		1.8	2.2	2.6	1.8	2.8	1	1.8	2.6	1.2	1	1.2	-	-	-	-

Semester - II																
18PEC24-Advanced Electrical Drives laboratory																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Design closed loop control for PMSM and SRM drives.	2	-	3	2	-	1	-	2	-	1	-	-	-	-	-
2	Analyze the operation of VSI and CSI fed induction motor drives	1	3	-	-	-	-	-	1	-	-	-	-	-	-	-
3	Select suitable inverter configuration and control for three phase induction motor drives.	3	-	1	-	-	-	-	1	-	-	2	-	-	-	-
4	Analyze the Operation of synchronous motor drives.	1	3	-	-	-	-	-	2	-	-	-	-	-	-	-
5	Use Digital control for special motor drives.	2	-	-	3	1	-	-	1	-	-	-	-	-	-	-
Average		1.8	1.2	0.8	1	0.2	0.2	-	1.4	-	0.2	0.4	-	-	-	-