

18PEE24	MODULATION CONTROL FOR POWER CONVERTERS	L	T	P	C
		3	0	0	3
Course Objectives:					
1.	To understand Necessity and Importance of PWM techniques				
2.	Implementation of PWM controllers				
Unit I	INTRODUCTION	9	+	0	
Introduction to PE converters, Modulation of one inverter phase leg, Modulation of single phase, VSI and 3 phase VSI.					
Unit II	MODULATION STRATEGIES	9	+	0	
Zero space vector placement modulation strategies, Losses-Discontinuous modulation, Modulation of CSI.					
Unit III	OVER MODULATION	9	+	0	
Over modulation of converters, programme modulation strategies.					
Unit IV	IMPLEMENTATION OF MODULATION CONTROLLER	9	+	0	
Pulse width modulation for multilevel inverters, Implementation of modulation controller					
Unit V	PWM	9	+	0	
Continuing developments in modulation as random PWM, PWM for voltage unbalance, Effect of minimum pulse width and dead time					
Total (L+T)= 45 Periods					
Course Outcomes:					
Upon completion of this course, the students will be able to:					
CO1	:	<i>Remember the basic concepts of power electronic converters.</i>			
CO2	:	<i>Understand and evaluate the modulation strategies.</i>			
CO3	:	<i>Understand the concepts of over modulation of converters.</i>			
CO4	:	<i>Apply the concept of pulse width modulation for inverters.</i>			
CO5	:	<i>Evaluate the practices and suggest suitable measures for continuous developments in modulation.</i>			
Reference Books:					
1.	D. Grahame Holmes, Thomas A. Lipo, "Pulse width modulation of Power Converter: Principles and Practice", John Wiley & Sons, 03-Oct-2003				
2.	Bin Vew, "High Power Converter", Wiley Publication				
3.	Marian K. Kazimirczuk, "Pulse width modulated dc-dc power converter", Wiley Publication				

PO CO	CO Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	<i>Remember the basic concepts of power electronic converters.</i>	3	1	1	1	1		1	1	1	1	1
CO2	<i>Understand and evaluate the modulation strategies.</i>	2	1	1	3	1		1	1	1	1	1
CO3	<i>Understand the concepts of over modulation of converters.</i>	2	1	1	3	1		1	1	1	1	1
CO4	<i>Apply the concept of pulse width modulation for inverters.</i>	3	1	1	1	1		1	1	1	1	1
CO5	<i>Evaluate the practices and suggest suitable measures for continuous developments in modulation.</i>	2	1	1	1	1	1	3	1	1	1	1