



VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
(Autonomous Institution, Affiliated to Anna University, Chennai)
DEPARTMENT OF EEE



LESSON PLAN

Sub code & Name: U14EE737 & Flexible AC Transmission

Systems Year / Sem : IV-YEAR A&B / VII Sem

UNIT – I INTRODUCTION				
S.NO	Topics to be covered	Duration in Min	Teaching Aid	Reff Book
1	Fundamentals of ac power transmission	45	BB	T1,T2,R1
2	Transmission problems	45	BB, Animation videos	T1,T2,R1, You Tube
3	Transmission problems and needs	45	BB, Animation videos	T1,T2,R1, You Tube
4	Emergence of FACTS	45	BB	T1,T2,R1
5	FACTS	45	BB	T1,T2,R1
6	FACTS -control considerations	45	BB	T1,T2,R1
7	FACTS controllers	45	BB, Animation videos	T1,T2,R1, You Tube
8	FACTS controllers-cotn	45	BB, Animation videos	T1,T2,R1, You Tube
9	Revision	45	BB	
UNIT –II SHUNT AND SYNCHRONOUS COMPENSATORS				
1	Principles of shunt compensation	45	BB	T1,T2,R1
2	Variable Impedance type	45	BB, Animation videos	T1,T2,R1, You Tube
3	Switching converter type	45	BB	T2,R1
4	Switching converter type	45	BB, Animation videos	T1,T2,R1, You Tube
5	Static Synchronous Compensator (STATCOM)	45	BB	T1,T2,R1
6	Static Synchronous Compensator (STATCOM)-cotn..	45	BB	T2,R1,
7	Configuration	45	BB, Animation videos	T1,T2,R1, You Tube
8	Characteristics and control	45	BB	T2,R1
9	Revision	45	BB	

UNIT –III STATIC SERIES COMPENSATORS				
1	Introduction	45	BB	T1,T2,R1
2	Principles of static series compensation using GCSC	45	BB	T1,T2,R1
3	TCSC	45	BB	T1,T2,R1
4	TSSC	45	BB	T1, R1
5	TSSC-cotn..	45	BB, Animation videos	T1,T2,R1, You Tube
6	Applications	45	BB, Animation videos	T1,T2,R1, You Tube
7	Static Synchronous Series Compensator (SSSC).	45	BB, Animation videos	T1,T2,R1, You Tube
8	SSSC-cotn..	45	BB	T1,T2,R1
9	Revision	45	BB	
UNIT – IV STATIC VOLTAGE REGULATORS AND PHASE SHIFTERS				
1	Introduction	45	PPT	T1, R1
2	Principles of operation	45	BB, Animation videos	T1, R1
3	Steady state model	45	BB, Animation videos	T1,T2,R1, You Tube
4	Steady state model-cotn..	45	PPT	T1, R1
5	Characteristics of a static voltage regulators	45	PPT	T1, R1
6	Phase shifters	45	PPT	T1, R1
7	Power circuit configurations	45	BB	T1, R1
8	Power circuit configurations-cotn..	45	BB	T1, R1
9	Revision	45	BB	
UNIT – V UNIFIED POWER FLOW CONTROLLER				
1	Introduction	45	PPT	T1, R1
2	UPFC -Principles of operation	45	BB, Animation videos	T1,T2,R1, You Tube
3	UPFC- characteristics	45	PPT	T1, R1
4	Independent active power flow control	45	BB	T1, R1
5	Independent reactive power flow control	45	BB	T1, R1
6	Independent reactive power flow control-cotn..	45	PPT	T1, R1
7	Comparison of UPFC with the controlled series	45	PPT	T1, R1

	compensators			
8	Phase shifters	45	BB	T1, R1
9	Revision	45	PPT	

REFERENCES

1. Song, Y.H. and Allan T. Johns, Flexible ac transmission systems (FACTS)", Institution of Electrical Engineers Press, London, 1999.
2. Hingorani ,L.Gyugyi „Concepts and Technology of flexible ac transmission system", IEEE Press New York, 2000 ISBN –078033 4588.
3. IEE Tutorials on „Flexible ac transmission systems" published in Power Engineering Journal, IEE Press, 1995.