

RAJASTHAN TECHNICAL UNIVERSITY, KOTA	
Lecture Plan	
Session:	2015-2016
Semester:	M.Tech III Sem (PS)
Name of Faculty:	S.K.Sharma
Department:	Electrical Engg.
Course Name and Number:	FLEXIBLE AC TRANSMISSION SYSTEMS
Name of Subject (with code):	FLEXIBLE AC TRANSMISSION SYSTEMS (3MPS1.1)
Batch Name/Discipline:	Electrical Engg.

Lecture Plan Details		
Lecture No.	Topic to be covered	Remark
L-1	Introduction	
L-2	Problems of AC transmission systems	
L-3	Power flow in parallel paths and meshed system	
L-4	Factors limiting loading capability	
L-5	Stability consideration	
L-6	Power flow control of an AC transmission line	
L-7	Basic types of facts controllers.	
L-8	Advantages of FACTS technology	
L-9	Basic concept of voltage-sourced converters	
L-10	Single and three phase bridge converters	
L-11	Power factor control	
L-12 to L-14	Transformer connections for 12-pulse ,24 pulse and 48 pulse operations	
L-15 and L-16	Midpoint and end point voltage regulation of transmission line	
L-17	Stability improvement	

L-18	Basic operating principle of Static Synchronous Compensators (STATCOM), Comparison between STATCOM and SVC	
L-19	Concept of series capacitive compensation	
L-20	Voltage and transient stabilities	
L-21	Power oscillation and sub synchronous oscillation damping	
L-22	Introduction to thyristor switched series capacitor (TSSC)	
L-23	Thyristor controlled series capacitor (TCSC)	
L-24	Operation of static synchronous series compensator	
L-25	Characteristics and applications of static synchronous series compensator	
L-26	Voltage and phase angle regulation	
L-27	Power flow control	
L-28	Improvement of stability by phase angle regulator	
L-29	Introduction to thyristor controlled voltage regulator (TCVR)	
L-30	Thyristor controlled phase angle regulators (TCPAR)	
L-31	Introduction to thyristor controlled braking resistor	
L-32	Thyristor controlled voltage limiter	
L-33	Unified Power Flow Controller (UPFC)	
L-34	Operating principles of UPFC	
L-35	Conventional transmission control capabilities	
L-36	Comparison of UPFC to series compensators and phase angle regulator	
L-37	Applications of UPFC	
L-38	Interline Power Flow Controller (IPFC)	
L-39	Basic operating principles and characteristics of IPFC	
L-40	Applications of IPFC	

