

Micro Lesson Plan
FUNDAMENTALS OF HVDC AND FACTS DEVICES (A80237)
(IV Year B.Tech. II Sem.)

Sl. No.	Name of the Topic	No. of Classes required	Cumulative number of period	Teaching AID
Unit – I : INTRODUCTION				
1.	Comparison Of AC & DC Transmission	2	2	Chalk & Talk
2.	Applications Of DC Transmission System,Types Of Dc Links	2	4	Chalk & Talk
3.	Typical Layout Of A HVDC Converter Station	2	6	Chalk & Talk
4.	HVDC Converters,Pulse Number	2	8	Chalk & Talk
5	Analysis Of Gratez Circuit With And Without Overlap	2	10	Chalk & Talk
6	Converter Bridge Circuits,Equivalent Circuit Or	2	12	Chalk & Talk
7	Rectifier And Inverter Configuration Of twelve pulse converter	2	14	Chalk & Talk
Unit – II : Converter & HVDC System Control				
8.	Principal of DC Link Control – Converters Control Characteristics –	2	16	Chalk & Talk
9.	Firing angle control – Current and extinction angle control –.	2	18	LCD
10.	Effect of source inductance on the system ;	2	20	Chalk & Talk
11.	Starting and stopping of DC link; Power Control	2	22	LCD
Unit – III : Harmonics,filter Reactive Power Control				
18.	Introduction,Generation Of Harmonics,	2	24	Chalk & Talk
19.	Ac And Dc Filters,	2	26	LCD
20	Reactive Power Requirements In Steady State –	2	28	LCD
21.	Conventional Control Strategies – Sources Of Reactive Static Var Systems	2	30	Chalk & Talk
22.	Power Flow Analysis in AC / DC Systems : Modelling of DC/AC converters	2	32	LCD
23.	Controller Equations – Solution of AC/DC	2	34	Chalk & Talk

24	load flow – Simultaneous method – Sequential method.	2	36	Chalk & Talk
Unit – IV : INTRODUCTION TO FACTS,STATIC SHUNT COMPENSATORS				
28.	Flow Of Power In Ac Parallel Paths	2	38	Chalk& Talk
29	And Meshed Systems, Basic Types Of Facts Controllers,	2	40	LCD
30.	Brief Description And Definition Of Of Facts Controllers	2	42	Chalk & Talk
31.	Objectives of shunt compensation	2	44	Chalk & Talk
32	Methods of controllable var generation	2	46	Chalk & Talk
33	Static var compensators	2	48	Chalk & Talk
34	SVC AND STATCOM,comparision between svc and statcom			
Unit – V : STATIC SERIES COMPENSATORS,COMBINED COMPENSATORS				
35.	Objective Of Series Compensation	2	50	Chalk & Talk
36	Variable impedance type thyristor switcheds series compensatorc(TCSC)	2	52	LCD
37.	Switching Converter Type Series Cmpensator	2	54	Chalk & Talk
38	Static Series Synchronous Compensator(SSSC)	2	56	LCD
39	Power angle characteristics-basic operating control schemes	2	58	LCD
40	Introduction ,unified power flow controller Basic operating principle	2	60	Chalk & Talk
41	Independent real and reactive power flow controller, control stricture	2	62	Chalk & Talk