

COURSE CONTENT:		
UNIT I	BASIC CONCEPTS	9
Introduction of DC Power transmission technology – Comparison of AC and DC transmission – Application of DC transmission – Description of DC transmission system – Planning for HVDC transmission – Modern trends in DC transmission.		
UNIT II	ANALYSIS OF HVDC CONVERTERS	9
Pulse number – Choice of converter configuration – Simplified analysis of Graetz circuit – Converter bridge characteristics – Characteristics of a twelve pulse converter – Detailed analysis of converters.		
UNIT III	MULTI TERMINAL HVDC SYSTEMS	9
Types of MTDC system – Comparison of series and parallel MTDC system – HVDC insulation – DC line insulators – DC breakers – Characteristics and types of DC breakers		
UNIT IV	REACTIVE POWER AND HARMONICS IN HVDC	9
Sources of reactive power - static VAR system – Reactive power control during transients – Generation of harmonics – Types and design of various DC filters – interference telephone.		
UNIT V	HVDC CABLES AND SIMULATION OF HVDC SYSTEMS	9
Introduction of DC cables – Basic physical phenomenon arising in DC insulation – Practical dielectrics – Dielectric stress consideration – Economics of DC cables compared with AC cables. Introduction to system simulation – Philosophy and tools – HVDC system simulation – Modeling of HVDC systems for digital dynamic simulation.		
TOTAL: 45 PERIODS		
TEXT BOOKS:		
<ol style="list-style-type: none"> 1. Padiyar, K. R., “HVDC power transmission system”, Wiley Eastern Limited, New Delhi Third Edition. 2015. 2. S. Rao, “EHV-AC, HVDC Transmission and Distribution Engineering”, Third Edition. 2013. 		
REFERENCE BOOKS:		
<ol style="list-style-type: none"> 1. Colin Adamson and Hingorani N G, “High Voltage Direct Current Power Transmission”, Garraway Limited, London, 1960. 2. Arrillaga, J., “High Voltage Direct Current Transmission”, Peter Pregrinus, London, 1983. 3. Rakosh Das Begamudre, “Extra High Voltage AC Transmission Engineering”, New Age Interantional (P) Ltd., New Delhi, 1990. 		