

SEMESTER <i>Eighth</i>	DEPARTMENT <i>Power Engineering</i>	COURSE TITLE <i>High Voltage Lab</i>
COURSE CODE <i>EP804</i>	HOURS: 3 UNITS: 1	COURSE SPECIFICATIONS <i>Practical Content</i>
<p>1. Introduction to High Voltage Technology.</p> <ul style="list-style-type: none"> ➤ Student should be familiar with HV transmission lines of national grids of 220 & 400kV . ➤ Visit the 220 & 400kV Control Dispatches and fields of 220 & 400kV national grids. ➤ Explain the principles of grids design, and control. 		
<p>2. Understand the Nature of Phenomenon in High Voltage Systems.</p> <ul style="list-style-type: none"> ➤ Get familiar with the various components of HV main stations and collect data of stations' installations. ➤ Get familiar with data sheets of equipments installed in HV sub-stations. ➤ Collect the insulation characteristics and data of stations' installations. 		
<p>3. Learn the Types and Characteristics of Insulating Materials Used in High Voltage and Their Insulating Voltage Withstand Levels.</p> <ul style="list-style-type: none"> ➤ Get close look to the types of surge arrestors, transient modification apparatus and voltage transformers in HV systems and collect their characteristics. ➤ Learn the methods of protection against surges in the 220/400kV sub-stations. ➤ Learn the methods of transient modification in the 220/400kV sub-stations.. 		
<p>4. Understand the Main Concepts of Insulation Coordination in High Voltage Systems.</p> <ul style="list-style-type: none"> ➤ Collect data of basic impulse insulating level and critical flashover voltage used in insulation coordination for various installations in 220/400kV sub-stations. 		
<p>5. Study Earthing Principles in HV Systems.</p> <ul style="list-style-type: none"> ➤ Collect information on earthing principles used in 220/400kV substations and power stations. ➤ Learn the advantages and disadvantages of earthed neutral directly or through resistance using drawings from existing substations. 		

References:

- 1- *Electric Power Systems*, B.M. Weedy
- 2- *Library of Schneider Company*.
- 3-*Library of Siemens Company*.