

<b>SEMESTER</b> <i>Fifth</i>	<b>DEPARTMENT</b> <i>Power Engineering</i>	<b>COURSE TITLE</b> <i>Transmission Systems Lab</i>
<b>COURSE CODE</b> <i>EP508</i>	<b>HOURS: 3</b> <b>UNITS: 1</b>	<b>COURSE SPECIFICATIONS</b> <i>Practical Content</i>
<p><b>1. Describe the Layout of the Transmission System &amp; Calculates the R, L and C of the Overhead Transmission Line.</b></p> <p>By experiment the student should verify:</p> <ul style="list-style-type: none"> <li>➤ Study a transmission line model and calculates its R, L and C.</li> <li>➤ Define the operating characteristics of the transmission line when loaded with a resistive load at the receiving end.</li> </ul>		
<p><b>2. To Classify the Transmission Line According to Its Length and Studies the Characteristics of Each.</b></p> <p>By experiment the student should verify:</p> <ul style="list-style-type: none"> <li>➤ Determines operating characteristics of the transmission line when loaded with an inductive load at the receiving end.</li> <li>➤ Determines operating characteristics of the transmission line when loaded with a capacitive load at the receiving end.</li> <li>➤ Determines voltage drop, percentage regulation and efficiency of the transmission line.</li> <li>➤ Evaluates power factor improvement using synchronous motor at no load or a static capacitor.</li> </ul>		
<p><b>3. Determine the Main Features of the Mechanical Design of the Transmission System and Its High Voltage Considerations.</b></p> <p>By experiment the student should verify:</p> <ul style="list-style-type: none"> <li>➤ Determine earth resistance using different types of ground electrodes.</li> <li>➤ Determine resistance of an earth electrode.</li> <li>➤ Determine resistance of an earthing loop.</li> <li>➤ Familiarize with different types of insulators and conductors.</li> </ul>		

**4. Study the Characteristics of the High Voltage Cables.**

By experiment the student should verify:

- Measure dielectric resistance of a cable.
- Measure dielectric capacitance of a cable.

**5. To Study the Features of the High Voltage DC Transmission.**

- Know the main characteristics of the high voltage transmission with DC voltage and the types of stations used in connection with the main grid.

**References:**

1. Dr.Asir and Dr. Megahed, Book, *Electrical Power System*.