SEMESTER	***DEPARTMENT***	***COURSE TITLE***
Fifth	*Power Engineering*	*Power Transformers*
COURSE CODE	***HOURS:*** 3	***COURSE SPECIFICATIONS***
EP509	***UNITS:*** 3	*Theoretical Content*

1. ***Understand the Importance of Transformers and Their Use in Distribution and Transmission Systems.***

2. ***Learn the Theory of Transformers.***
   - Study the theory of ideal transformer.
   - Determine the equivalent circuit of transformer and types of losses in transformers.
   - Study the equivalent circuit of transformer referred to primary winding and to secondary windings.
   - Study the approximate equivalent circuit of real transformer.

3. ***Study the No-Load Test, the Short Circuit Test.***
   - Learn defining the parameters of no-load test and short circuit test.
   - Calculate losses and transformer parameters from test results.

4. ***Study the Voltage Drop, Voltage Regulation and Efficiency of Transformer.***
   - Calculate the voltage drop in transformer and define its types.
   - Calculate the voltage regulation and define its importance in designing and operating transformers.
   - Determine the efficiency of transformer and define the conditions affecting it.

5. ***Learn the Different Types of Transformer Winding Connections. Conditions of Parallel Operating Transformers.***
   - Learns the different types of transformer winding connections.
   - Defines the conditions of parallel operating transformers.

6. ***Study the Principles of Transformer Loading.***

References:

1- ***Electric Power Systems.*** B.M. Weedy

2- Library of Schneider Company.

3- ***Library of Siemens Company.***

4- ***General Theory of Electrical Machines.*** A.T. Morgan 1979.

5- ***DC Machines and Transformers.*** Second Edition. K. Murugesh Kumar.