POWER SYSTEM & SIMULATION LAB – II

Course Code: 13EE2117 **L P C**
0 3 2

Pre requisites: Power System Analysis, Power System Operation & Control

Course Outcomes:

At the end of this Course, the student will be able to

CO 1: Determine power flow study of a given power system.
CO 2: Analyze breakdown strength of transformer oil.
CO 3: Determine Transmission line parameters and estimate Ferranti effect.
CO 4: Measure Electrical parameters by using Power Quality Analyzer.
CO 5: Simulate two-area power system

LIST OF EXPERIMENTS

1. IDMT (Inverse Definite Minimum Time) Relay Characteristics
2. Study and testing of over current and over voltage relays in transformer protection system with IDMT Relay characteristics
3. Design a compensator for a given system for required specifications.
4. Conduct a power flow study on a given power system.
5. Conduct a power flow study on a given power system network using Gauss-Seidel iterative method.
6. Determination of breakdown strength of oil by variable distance electrodes.
7. Develop a Simulink model for a two-area load frequency problem and simulate the same.
8. Determine Power Quality parameters of a given data as per IEEE Standards
9. Design a PID controller for two-area power system and simulate the same.
10. Simulate Transmission line and find :
    a. Transmission line parameter
    b. Surge Impedance loadings
11. Economic load dispatch without and with transmission loss using MiPower

Text Books:

1. Allen J.Wood and Bruce F.Wollenberg, "*Power Generation, Operation and Control*", 2nd Edition, John Wiley & Sons Inc, 1996.

2. Olle E.Elgerd, "*Electrical Energy Systems Theory – An introduction*" 2nd Edition, Tata McGraw Hill, 1983.

3. Hadi Saadat, "*Power System Analysis* ", Second Edition , TMH Publication New Delhi.

4. D. P. Kothari and J. S. Dhillon, "*Power System Optimization*", Second Edition-PHI Learning Private Limited- 2011.