POWER SYSTEM & SIMULATION LAB – II

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

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

Course Educational Objectives:

1. To Design and conduct experiments on various power system components, analyze and interpret data.
2. To give hands on experience in using modern software tools for simulation of various power System controls.

Course Outcomes: At the end of the lab, the student will be able to

1. Analyze and interpret data on various power system components.
2. Simulate the characteristics of various power system controls using modern software tools.

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.