IV Year I Semester   **L   T   P   C**

17EE712   **0   0   3   2**

POWER SYSTEMS LAB

Preamble:
This lab course is introduced to evaluate the sequence networks under faulty conditions and know the load flow studies of bulk power systems. The lab also provides the knowledge on various matrices.

Learning objectives:
1. To impart the practical knowledge of functioning of various power system components and determination of various parameters and simulation of load flows, transient stability, LFC and Economic dispatch.

Any 10 of the Following experiments are to be conducted:
1. Sequence impedances of 3 phase Transformer.
2. Sequence impedances of 3 phase Alternator by Fault Analysis.
3. Sequence impedances of 3 phase Alternator by Direct method.
4. ABCD parameters of Transmission line.
5. Power Angle Characteristics of 3phase Alternator with infinite bus bars.
6. Dielectric strength of Transformer oil.
7. Calibration of Tong Tester.
8. Load flow studies using Gauss-seidel method
9. Load flow studies using N-R method..
10. Transient Stability Analysis
11. Load frequency control with &without control
12. Load frequency control with control
13. Economic load dispatch with & without losses
14. Economic load dispatch with losses.

Learning Outcomes:
1. The student is able to determine the parameters of various power system components which are frequently occur in power system studies and he can execute energy management systems functions at load dispatch center.

Text books:
1. Charles K. Alexander and Mathew N.O. Sadiku, "Fundamentals of Electric Circuits", 5th Edition, Tata McGrawHill Publications, 2012.

Reference books:
1. M.E. Van Valkenburg , "Network Analysis", Prentice Hall of India Pvt Ltd.,3rd Edition, New Delhi.
2. Hayt and Kemmerly, "Engineering Circuit Analysis", Tata McGrawHill Publications, 7th Edition, 2007.