Power System Analysis

Module- I

Automatic Generation and Voltage Control:

Turbine & Generator- Load frequency Scheme, Steady state & dynamic analysis in frequency domain for single & two area system, Economic dispatch Control, Automatic Voltage Control. Power flow Analysis- NR and Fast Decoupled methods.

Module- II

Optimal System Operation:

Generation allocation problem formulation, Loss Coefficients, Optimal load flow solution, Hydrothermal Coordination, constraints in Unit- commitment, Unit commitment solution methods.

Module- III

Modeling of Transmission lines & transformers with off-nominal taps.

Sparse matrise technique for large- Scale system problems- Gaues elimination & bi-factorization method. Algorithm for short circuit studies, Z Bus Fomulation, Unsymmetrical fault analysis using symmetrical components.

Books Recommended:

1. *Stagg G.W., Eabiad A.H. " Computer methods in Power system analysis." Mc Graw Hill, 1968.*
2. *Nagrath & Kothari, "Modern Power System Analysis"*
3. *Elaerd O.Z, " Electrical Energy System Theory- An*