



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE STRUCTURE-R19

IV Year – I SEMESTER		L	T	P	C
		0	0	2	1
POWER SYSTEMS & SIMULATION LAB					

Learning Objectives:

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. Load flow studies using Gauss-seidel method
6. Load flow studies using N-R method..
7. Load frequency control of two area with & without control
8. Economic load dispatch with & without losses
9. Transient analysis of single machine connected to infinite bus(SMIB).
10. Modeling of transformer and simulation of lossy transmission line.
11. Analysis of three phase circuit representing the generator transmission line and load. Plot three phase currents & neutral current.
12. Simulation of transient response of RLC circuits
 - a) Response to pulse input
 - b) Response to step input
 - c) Response to sinusoidal input
13. Simulation of single-phase full converter using RLE loads and single phase AC voltage controller using RL loads
14. Plotting of Bode plots, root locus and nyquist plots for the transfer functions of systems up to 5th order

Learning Outcomes:

After the completion of the course the student should be 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.