



# LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(An Autonomous Institution Since 2010)

Approved by AICTE, New Delhi and Permanently Affiliated to JNTUK, Kakinada  
Accredited by NAAC with Grade 'A' & ISO: 21001:2018, 50001:2018, 14001:2015 certified

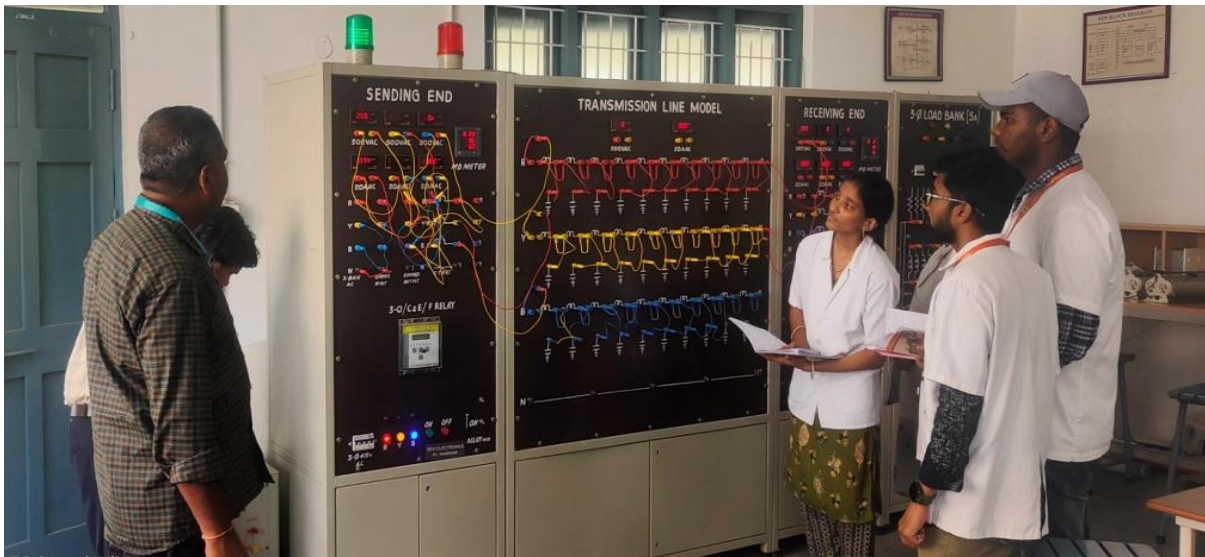
Department of Electrical and Electronics Engineering

Accredited by NBA under Tier-I

## POWER SYSTEM LAB

The primary purpose of a Power Systems Lab is to provide hands-on experience and practical understanding of power system theory, enabling students to analyze, design, and troubleshoot real-world power system issues, from generation to transmission and distribution. Students can get concrete ideas about various equipment in practical power system network.

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MAJOR EQUIPMENT AVAILABLE IN LAB:

S.No.	Name of the Equipment	Qty
1	Megger Earth Tester DET3TD Model	01
2	Solar PV Emulator	01
3	3D Printer	01
4	Three Phase Over Current Earth Fault Numeric Relay Testing	01
5	3-Phase transmission line model	01
6	Three Phase Over Current Earth Fault Numeric Relay Testing	01
7	3-Phase transmission line model	01

**LIST OF Experiments (VI sem)**

1. Determination of Receiving end quantities and the line performance of a medium/long transmission line using MATLAB
2. Using MATLAB code determine:
(i) Bus admittance matrix by inspection method for a 3-bus power system and obtain
(ii) Power flow solution by Newton-Raphson method.
3. Determination of Sequence components (Positive, Negative and Zero) of an alternator.
4. Transient analysis of a Single Machine Infinite Bus (SMIB) system.
5. Simulation of LG, LL, LLG and LLL faults on a simple power system using PSCAD/MATLAB.
6. Determine steady state frequency error and frequency deviation response for an
(i) Isolated power system and (ii) Interconnected power system.
7. Plot the Swing curve for a simple 3 or 4 bus power system using MATLAB / PSCAD.
8. Plot V-I characteristics of Solar panel at various levels of insolation.
9. Study the effects of temperature and irradiance on Solar cell and plot the characteristics.
10. Study the performance of a Wind turbine system at different wind speeds and plot the

LAB INCHARGE :Mr. Imran Abhul

LAB TECHNICIAN Mr. Dhunujaya naik