



MOTHER TERESA
INSTITUTE OF SCIENCE & TECHNOLOGY
Permanently Affiliated to JNTUH, Hyderabad
Recognition under Section 2(f) & 12 (B) of the UGC Act, 1956
AN ISO 9001:2008 CERTIFIED INSTITUTION
SANKETIKA NAGAR, SATHUPALLY – 507303, KHAMMAM Dist., TELANGANA



Department of Electrical and Electronics Engineering

Power systems



Lab Description

This lab imparts knowledge about different types of relays, study of synchronous machines and transmission line simulator.

Course Objectives:

1. To allow students to practically verify several concepts and procedures learned in power system modeling and analysis.
2. To develop hands-on experience of how certain procedures of power system operation are carried out
3. To carry out system studies using state of the art power systems analysis software to assess system operation in steady state and under faulted conditions.
4. To promote teamwork among students and effective communication skills.

Course Outcomes:

1. Understand how to measure electrical parameters characteristics of a 3-phase transmission line.
2. Understand the effect of active and reactive loading on the voltage drop and the power handling capability of a transmission line.
3. Understand the significance of the “torque angle” and its relation to synchronous motor loading and investigate the effect of field excitation on the reactive loading of the motor.
4. Understand the effect of voltage level on power transmission and the effect that different types of loads (capacitive, inductive) have on power plant loading.
5. Practically know the procedure used in preparing transmission line, load and generator data for a load flow system study.
6. Understand the procedure and steps needed to implement a load flow system study and interpret the results provided by the software.
7. Understand the significance of extra data requirement needed for short circuit calculations and are able to prepare such data for a practical short circuit system study.

8. Know how to carry out a short circuit analysis study for symmetrical and unsymmetrical faults and are able to interpret the results of the analysis.
9. Understand the significance of extra data requirement needed for system stability studies and are able to prepare such data for practical system studies.
10. Know how to carry out a transient analysis study for faults of various durations on the system and are able to determine critical clearing times for various faults.