INSTITUTE OF MANAGEMENT & TECHNOLOGY

INNOVATION • MOTIVATION • TRANSFORMATION

SWITCH GEAR AND PROTECTION LAB (BEEP-701)

Course Outcomes:

The students are expected to

- To develop MATLAB Program to Simulate Ferranti Effect
- To understand MATLAB Program to Model Transmission Lines
- To observe the voltage distribution across an Insulator String
- To understand Sag and factors effecting on Sag of Transmission Line
- To understand Three phase short circuit analysis in a Synchronous Machine using MATLAB/ SIMULINK.

List of Programs:

1. To determine direct axis reactance (xd) and quadrature axis reactance (xq) of a salient pole alternator.
2. To determine negative and zero sequence reactances of an alternator.
3. To determine sub transient direct axis reactance (xd) and sub transient quadrature axis reactance (xq) of an alternator.
4. To determine fault current for L-G, L-L, L-L-G and L-L-L faults at the terminals of an alternator at very low excitation.
5. To study the IDMT over current relay and determine the time current characteristics.
6. To study percentage differential relay Circuit breakers: Need of circuit breakers, types of circuit breakers, operating modes, principles of construction, details of Air Blast, Bulk Oil, Minimum Oil, SF6, Vacuum Circuit Breakers, DC circuit breakers. Uttarakhand Technical University, Dehradun New Scheme of Examination as per AICTE Flexible Curricula.
7. To study Impedance, MHO and Reactance type distance relays.
8. To determine location of fault in a cable using cable fault locator.
9. To study ferranti effect and voltage distribution in H.V. long transmission line using transmission line model. 10. To study operation of oil testing set.

Department of Electrical and Electronics Engineering