

FUTURE INSTITUTE OF ENGINEERING & MANAGEMENT

Department of Electrical Engineering

Power Systems Laboratory

Description: Power Systems Laboratory is well equipped with all academic experiments and having various relay kit, digital storage oscilloscope (DSO's), Regulated power supplies, voltage and current measuring devices etc. Through hands on experiment with real components & equipments, students can gain practical exposure.

Major Facilities	:	POWER WORLD software and Hardware facilities.
Faculty In-Charge	:	Mr.Arnab Roy, M.Tech, Assistant Professor
Technician	:	Mr.Sanjoy Sarkar, DEE, B.Tech
Area	:	79.65sq.m
No. of experiments	:	23
Courses conducted	:	Power Systems-I (10), Power Systems-II (13)
Exclusive / Shared	:	Exclusive

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List of Major Equipment

Sl. No.	Major equipment	Quantity
1.	A,B,C,D Parameter determination kit	1
2.	Power Factor meter	1
3.	istribution Network Analyser with Digital Multimeter	1
4.	Special type patch chord for DC Network Analyser	50
5.	Earth Tester Meggar	1
6.	Earth Resistance Tester (Digital Type)	1
7.	Dielectric manual oil insulation test set	1
8.	Break down test set for solid insulating material	1
9.	Phase Shifter & inductor with Phase angle meter fitted on a cabinet.	1
10.	Insulator	3
11.	Active reactive power control of an Alternator panel	1
12.	Alternator	2
13.	DC Motor	2
14.	Induction Motor (3ph)	1
15.	DC Regulated power supply	1
16.	3-Ph Lamp Load Box	1
17.	V/F Meter	2
18.	Phase Sequence Indicator	1
19.	Tan Delta set with heater	1
20.	Timer relay Test kit	1
21.	C.T & P.T Current –Voltage ratio test Bench	1

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Power Systems-I Lab

List of Experiments as per Syllabus

Sl. No.	Name of The Experiment
1.	Determination of the generalized constants A,B,C,D of a long transmission line.
2.	Simulation of DC distribution by network analyser.
3.	Measurement of earth resistance by earth tester.
4.	Dielectric strength test of insulating oil.
5.	Determination of break down strength of solid insulating material.
6.	Different parameter calculation by power circle diagram.
7.	Study of different types of insulators.
8.	Active & reactive power control of an alternator.
9.	Study and analysis of an electrical transmission line circuit with the help of PSPICE.
10.	Dielectric constant, tan delta, resistivity test of transformer oil.

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Power Systems-II Lab

List of Experiments as per Syllabus

Sl. No.	Name of The Experiment
1.	Study of the characteristics of on load delay relay and off load delay relay
2.	Test to find out polarity, ratio and magnetization characteristics of CT and PT
3. (a)	Test to find out characteristics of under voltage relay
3. (b)	Test to find out characteristics of earth fault relay
4.	Study on DC load flow
5.	Study on AC load flow using Gauss seidel method
6.	Study on AC load flow using Newton Raphson method
7.	Study on Economic load dispatch
8.	Study of different transformer protection schemes
9.	Study of different motor protection schemes
10.	Study of different characteristics of over current relay

List of Experiments beyond the Syllabus

Sl. No.	Name of The Experiment
11.	Study of AC power flow incorporating tap changer and phase shifter
12.	Study of voltage stability for simple power system
13.	Study of different types of fault over a power system network