

Electrical machines lab

The Electrical Machines Laboratory is designed to support the theory study for Electromechanical Devices. This Lab Concerns with electrical machines types (DC and AC machines), power, efficiency, characteristics of electrical machines as a motor, generator, determining the parameters and performance characteristics of transformer, methods of control of the speed of motor, control of the generator voltage etc. Through hands-on experiments with real machines, students gain practical experience on transformers and various types of machine drives.

Objects of electrical machines lab

- To plot the magnetizing characteristics of DC shunt generator and understand the mechanism of self-excitation.
- To control the speed of the DC motors.
- Determine and predetermine the performance of DC machines.
- To predetermine the efficiency and regulation of transformers and assess their performance.
- To control the speed of three phase induction motors.
- To determine /predetermine the performance three phase and single phase induction motor.
- To improve the power factor of single phase induction motor.
- To predetermine the regulation of three– phase alternator by various methods, find $X_d/$ X_q ratio of alternator and asses the performance of three–phase synchronous motor

Name of Equipment	Manufacturar	Quantity	Date of procurement	Supplier Address& Address of Service Agency
3HP ,415V 3- Φ squirrel cage induction motor with mechanical breaking	BENN	1NO	2/12/2008	Futuretech instruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
3HP 220V, 1500RPM DC shunt motor coupled to DC shunt generator 1KW ,220V, 1500rpm with DC motor starter	BENN	1NO	13/06/2008	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
5HP 220V, DC shunt motor coupledto 3.5KVA sailentploee synchronous alternator with 3 pointstarter	BENN	1NO	9/1/2008	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
3HP DCshunt motor coupled to 1.5KW DC series generator	BENN	1NO	27/07/2008	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
3KW/5HP/220V/1500rpm two identical DC series machines coupled with each other	BENN	1NO	27/7/2008	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad

3HP,220V,1500rpm DC shunt motor with brakedrum and loadingarrangement and 3 pointstarter	BENN	1NO	13/6/2008	Futuretechinstruments PVTLTD 414, CHENOY Trade Center ,Secundrabad
DC shunt motor with brake drum and loading arrangement and 3 point starter for DC motor	BENN	1NO	2/12/2008	Futuretechinstruments PVTLTD 414, CHENOY Trade Center ,Secundrabad
3.7KW ,220V, 1500rpm DC compound motor with 3 pointstarter and brakedrum	Bharath	1NO	2/12/2008	Futuretechinstruments PVTLTD 414, CHENOY Trade Center ,Secundrabad
3HP, 415V,1400rpm 3- Φ slip ring induction motor with brake drum arrangement	Benn	1NO	7/08/2010	Perfect electronics , labbi pet vijayawada
3KW ,415V, AC synchronous motor with break drumcoupled with DC Excitation unit with auto transformer	Benn	1NO	7/08/2010	Perfect electronics , labbi pet vijayawada
2HP single phase capacitor starter and capacitor runinduction motor	Benn	1NO	7/8/2010	Perfect electronics , labbi pet vijayawada
2KVA transformers (6No's)	Physitech	1NO	7/08/2010	Perfect electronics , labbi pet vijayawada
3- Φ ,15A, Auto transformers	Perfect electronics	1NO	7/8/2010	Perfect electronics , labbi pet vijayawada
3- Φ ,20A Auto transformers	Valikaelectronics	1NO	11/4/2017	Valikaelectronics #3-70 Nagaram ,Hyderabad
1- Φ ,15A, Auto transformers	Perfect electronics	1NO	7/08/2010	Futuretechinstruments PVTLTD 414, CHENOY Trade Center ,Secundrabad
1- Φ ,10A, Auto transformers (2NO'S)	Perfect electronics	2NO'	7/08/2010	Perfect electronics , labbi pet vijayawada
Non –contact tacho meter	Systems	4NO'S	6/08/2008	Futuretechinstruments PVTLTD 414, CHENOY Trade Center ,Secundrabad
Resistive /1 Φ /230V/20A/5KW 10 steps load	Future tech	3NO'S	22/03/2011	Futuretechinstruments PVTLTD 414, CHENOY Trade Center ,Secundrabad
31/2 digital handled digital multimeter (2no's)	Future tech	2NO'S	6/02/2010	Futuretechinstruments PVTLTD 414, CHENOY Trade Center ,Secundrabad
31/2 digital handled digital multimeter	Valikaelectronics	2NO'S	11/04/2017	Valikaelectronics #3-70 Nagaram ,Hyderabad
Rheostat 1.2A/750 Ω	Valikaelectronics	2NO'S	6/08/2008	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
Rheostat 1.7A/300 Ω	Valikaelectronics	2NO'S	6/08/2008	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
Rheostat 2.8A/200 Ω	Valikaelectronics	4NO'S	6/08/2008	Valikaelectronics #3-70 Nagaram ,Hyderabad
Rheostat 1.2A/360 Ω	Valikaelectronics	5NO'S	11/4/2017	Valika electronics #3-70 Nagaram ,Hyderabad

Rheostat 1.2A/750Ω	Valikaelectronics	2N0'S		Valika electronics #3-70 Nagaram ,Hyderabad
Spw-5/10A -75/150V wattmeter	Meco-g	4N0'S	20/08/2008	Futuretech Instruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
Spw-5/10A -300/600V UPF wattmeter	Meco-g	4N0'S	20/08/2008	Futuretech instruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
Spw-/150V/ 300/600V LPF wattmeter	Meco-g	4N0'S	20/08/2008	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
Wattmeter 75/150/300V	Meco-g	4N0'S	27/7/13	Perfect electronics , labbi pet vijayawada
Wattmeters 150V/300V/600V 5/10A	Valikaelectronics	4N0'S	11/4/17	Valika electronics #3-70 Nagaram ,Hyderabad
Wattmeters 150V/300V/600V 5/10A UPF	Valikaelectronics	2N0'S	11/4/17	Valika electronics #3-70 Nagaram ,Hyderabad
MC DC 2A portable Ammeter	MECO-V	3N0'S	19/08/2009	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
MC DC 2A portable Ammeter	MECO-V	6N0'S	6/08/2008	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
MC DC 5/10A portable Ammeter	MECO-V	4N0'S	6/08/2008	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
MC DC 5/10A portable Ammeter	MECO-V	2N0'S	24/9/2009	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
MC 20A portable Ammeter	MECO-V	8N0'S	24/9/2009	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
MI 5/10A portable Ammeter	MECO-V	4N0'S	6/08/2008	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
MI 1/2A portable Ammeter	MECO-V	2N0'S	6/08/2008	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
MI 10/20A portable Ammeter	MECO-V	2N0'S	11/4/17	Valikaelectronics #3-70 Nagaram ,Hyderabad
MC DC 300V portable voltmeter	MECO-V	6N0'S	6/08/2008	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
MC DC 300V portable voltmeter	MECO-V	8N0'S	24/9/2009	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
MC DC 150/300V portable voltmeter	MECO-V	4N0'S	6/08/2008	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
MC DC 300/600V portable voltmeter	MECO-V	4N0'S	24/9/2009	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
MC DC 150V/300V portable voltmeter	Valikaelectronics	3N0'S	11/4/17	Valikaelectronics #3-70 Nagaram ,Hyderabad
MI AC 150/300V portable	MECO-V	4N0'S	6/08/2008	Futuretechinstruments PVT LTD

voltmeter				414, CHENOY Trade Center ,Secundrabad
MI AC 300/600V portable voltmeter	MECO-V	4N0'S	6/08/2008	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
MI AC 300/600V portable voltmeter	MECO-V	4N0'S	24/9/2009	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
DC 3point starters	Valikaelectronics	3N0'S	11/4/17	Valikaelectronics #3-70 Nagaram ,Hyderabad
DC 2 Point starters	Valikaelectronics	1N0	15/7/16	Valikaelectronics #3-70 Nagaram ,Hyderabad
Three point starter	Valikaelectronics	1N0	7/3/18	Valikaelectronics #3-70 Nagaram ,Hyderabad
3-phase inductive load 440V/1-10A	Valikaelectronics	1N0	7/3/18	Valikaelectronics #3-70 Nagaram ,Hyderabad

ELECTRICAL MACHINES - II LAB



Electrical circuits lab

This lab is specially designed and developed for the students to observe the true nature and characteristics of various power consuming and storing devices in basic level.. This lab gives practical observation of the different characteristics of electrical elements when connected differently. This gives a good foundation on electrical components to the students in the initial years. At the end of the semester the student will get equipped to handle any power circuit. We also encourage students to take up projects and mini projects by providing them with the required components.

Objects of electrical circuit's lab

- To verify and demonstrate various theorems
- Locus diagrams, resonance and two port networks.
- To determine self and mutual inductance of a magnetic circuit, parameters of a given coil measurement of 3- phase power

Name of Equipment	Manufacturer	Quantity	Date of procurement	Supplier Address & Address of Service Agency
Super position theorem kit	Future Tech	1N0	24/9/09	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
Millimanstheorem kit	Future Tech	2N0,S	24/9/09	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
Máximum Power transfer theorem kit	Future Tech	1N0	24/9/09	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
Rehostats 5A/25ohms	Future Tech	10N0'S	6/02/10	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
Rehostats 5A/35ohms	Future Tech	3N0'S	6/08/08	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
Rehostats 5A/40ohms	Future Tech	14N0'S	6/08/08	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
Rehostats 5A/50ohms	Future Tech	4N0'S	6/08/08	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
Rehostats 2.8A/100ohms	Future Tech	4N0'S	6/08/08	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
Rehostats 1.7A/200ohms	Future Tech	2N0'S	19/8/09	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
Rehostats 8.5A/18ohms	Future Tech	3N0'S	19/8/09	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
MI AC 1/2A Ammeters	Meco-v	5N0'S	24/9/09	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad

MI AC 1/2A Ammeters	Meco-v	4N0'S	24/9/09	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
MI AC 5/10A Ammeters	Meco-v	10N0'S	24/9/09	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
MI AC 150/300V voltmeters	Meco-v	4N0'S	24/9/09	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
MI AC 150/300V voltmeters	Meco-v	2N0'S	6/8/08	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
MI AC 75/150/300V	Valika electronics	1N0	11/4/2017	Valika electronics #3-70 Nagaram, Hyderabad
Decade resistance box		2N0'S	24/9/09	Futuretechinstruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
31/2 digithand held multimeter	Valika electronics	6N0'S	11/04/17	Valika electronics #3-70 Nagaram ,Hyderabad
Decade inducatnce box	Valika electronics	2N0'S	15/7/16	Valika electronics #3-70 Nagaram ,Hyderabad
Decade capacitance box	Valika electronics	1N0	15/7/16	Valika electronics #3-70 Nagaram ,Hyderabad
1MHZ function generator	Valika electronics	1N0	15/7/16	Valika electronics #3-70 Nagaram ,Hyderabad
1-phase autoTransformer	Valika electronics	6N0'S	11/04/2017	Valika electronics #3-70 Nagaram ,Hyderabad
3-phase variac	Valika electronics	1N0	11/04/2017	Valika electronics #3-70 Nagaram ,Hyderabad
3-phase inductive load	Valika electronics	1N0	11/04/2017	Valika electronics #3-70 Nagaram ,Hyderabad
Single Phase LPF Wattmeter	Valika electronics	1N0	7/3/2018	Valika electronics #3-70 Nagaram ,Hyderabad
Single Phase UPF Wattmeter	Valika electronics	1N0	7/3/2018	Valika electronics #3-70 Nagaram ,Hyderabad
MI Ammeter	Valika electronics	1N0	7/3/2018	Valika electronics #3-70 Nagaram ,Hyderabad
3-phase resistive load 415V/440V/7.5KW	Valika electronics	1N0	7/3/2018	Valika electronics #3-70 Nagaram ,Hyderabad

ELECTRICAL CIRCUITS LAB



Power electronics lab

Power Electronics is an important area of Electrical Engineering. It broadly deals with controlling the flow of electrical power using electronic switching devices. Power Electronics lab introduces the student to measure and simulate the important operating characteristics of power electronic circuits and power semiconductor devices.

Objects of power electronics lab

- To study the characteristics of various power electronic devices and analyze firing circuits and commutation circuits of SCR.
- To analyze the performance of single-phase and three-phase full-wave bridge converters with both resistive and inductive loads.
- To understand the operation of AC voltage regulator with resistive and inductive loads. To understand the working of Buck converter, Boost converter

Name of Equipment	Manufacturer	Quantity	Date of procurement	Supplier Address & Address of Service Agency
1 -phase Cyclo converter Power Circuit 230V / 5A	Hi-Q test Equipment	1NO	27/11/2010	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
Single Phase AC Voltage Controller	Hi-Q test Equipment	1NO	27/11/2010	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
Single Phase fully controlled bridge converter Power Circuit	Hi-Q test Equipment	1NO	27/11/2010	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
1-phase Parallel Inverter with built in firing circuit	Hi-Q test Equipment	1NO	27/11/2010	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
Single phase Half Controlled converter	Hi-Q test Equipment	1NO	27/11/2010	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra,

power circuit				Hyderabad
1-phase Series Inverter circuit with trainer kit	Hi-Q test Equipment	1NO	27/11/2010	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
1-phase dual converter power circuit with firing circuit	Hi-Q test Equipment	1NO	27/11/2010	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
Study of Characteristics of SCR, MOSFET & IGBT	Hi-Q test Equipment	1NO	27/11/2010	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
Study of SCR firing circuits trainer with built in power supply	Hi-Q test Equipment	1NO	27/11/2010	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
Forced Communication Circuit	Hi-Q test Equipment	1NO	27/11/2010	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
D C – Chopper Firing Circuit	Hi-Q test Equipment	1NO	27/11/2010	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
Three phase half controlled converter power circuit	Hi-Q test Equipment	1NO	27/11/2010	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
Booster transformer	Instrument Technique PVT limited	2NO'S	5/5/2008	Instrument Technique PVT limited
Regulated powers supply 30V/2A	Valikaelectronics	1NO	12/4/17	Valika electronics #3-70 Nagaram ,Hyderabad
Regulated power supply dual channel	Valikaelectronics	1NO	12/4/17	Valika electronics #3-70 Nagaram ,Hyderabad
30MHz ,2 channel oscilloscope	Future Tech pvt limited	1NO	24/7/2009	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
30MHz ,dual trace channel oscilloscope	Valikaelectronics	1NO	12/4/17	Valika electronics #3-70 Nagaram ,Hyderabad
DC-DC Buck Converter	Valikaelectronics	1NO	6/5/17	Valika electronics #3-70 Nagaram ,Hyderabad
DC-DC Boost Converter	Valikaelectronics	1NO	6/5/17	Valika electronics #3-70 Nagaram ,Hyderabad
R-load 360Ω/1.2A	Hi-Q test Equipment	10NO'S	27/11/2010	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
L-load(0-50mH, 100mH,150mH)	Hi-Q test Equipment	7NO'S	27/11/2010	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
Isolation transformer (0-230V)	Hi-Q test Equipment	5NO'S	27/11/2010	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad

DC regulated power supply 30V/2A	Hi-Q test Equipment	1NO'S	27/11/2010	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
Design & Development of Firing Circuits SCR	Valika Electronics	1NO	7/3/2018	Valika electronics #3-70 Nagaram ,Hyderabad
1-Phase Square Wave Bridge Inverter R&RL Load	Valika Electronics	1NO	7/3/2018	Valika electronics #3-70 Nagaram ,Hyderabad

POWER ELECTRONICS LAB



Control systems lab

In the field of modern Science and Engineering, machines are controlled without any human assistance. Students are usually unable to relate the theory to applications in the real world. Therefore different experiments are designed in control system. This Lab makes an integrated lab atmosphere that combines data acquisition and analysis. This lab includes the study of temperature and speed control of motor, circuit implementation of controllers, mathematical modeling and simulation of control systems.

Objects of control systems lab

- To impart hands on experience to understand the performance of basic control system components such as magnetic amplifiers, D.C. Servo motors, A.C. Servo motors, stepper motor and potentiometer.
- To understand time and frequency responses of control system with and without controllers and compensators

Name of Equipment	Manufacturer	Quantity	Date of procurement	Supplier Address & Address of Service Agency
Linear System Simulator	Physitech	1NO	20/7/10	Proview Instruments Vallurupalli complex ,M.G. Road ,vijyawada
Characterstics of synchro	Physitech	1NO	20/7/10	Proview Instruments Vallurupalli complex ,M.G. Road ,vijyawada
Transfer function of DC servomotor	Physitech	1NO	20/7/10	Proview Instruments Vallurupalli complex ,M.G. Road ,vijyawada
Effect of P,PI,PD,PID controllers	Physitech	1NO	20/7/10	Proview Instruments Vallurupalli complex ,M.G. Road ,vijyawada
Lag lead compensation	Physitech	1NO	20/7/10	Proview Instruments Vallurupalli complex ,M.G. Road ,vijyawada
Characteristics of magnetic amplifier	Physitech	1NO	20/7/10	Proview Instruments Vallurupalli complex ,M.G. Road ,vijyawada
Characteristics of magnetic amplifier	Valikaelectronics	1NO	6/5/17	Valika electronics #3-70 Nagaram ,Hyderabad
Characteristics of AC Servo motor	physitech	1NO	20/7/10	Proview Instruments Vallurupalli complex ,M.G. Road ,vijyawada
Speed –torque Characteristics of AC Servo motor	Valikaelectronics	1NO	6/5/17	Valika electronics #3-70 Nagaram ,Hyderabad
3-1/2 Digit Hand Held Digital Multimeter	Future Tech	2 NO'S	6/2/10	Futuretech instruments PVT LTD 414, CHENOY Trade Center ,Secundrabad
1mhz Function Generator	Future Tech	1 NO	24/9/09	Futuretech instruments PVT LTD 414, CHENOY Trade Center, Secundrabad
Servo Controlled Voltage Stabilizer	Hi-Q test equipment	1 No	24/12/2010	HI-Q Test Equipment PVT LYD Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
Temperature Control Using PID	physitech	1 No	26/6/13	Perfect electronics , labbi pet vijayawada
30mhz Dual Trace Oscilloscope	Valikaelectronics	2 No	12/4/17	Valika electronics #3-70 Nagaram ,Hyderabad
Regulated Power Supply Single Channel	Valikaelectronics	1 No	12/4/17	Valika electronics #3-70 Nagaram ,Hyderabad
Regulated Power Supply Dual Channel	Valikaelectronics	1 No	12/4/17	Valika electronics #3-70 Nagaram ,Hyderabad
DC Servo Motor Speed-Torque Study Unit	Valikaelectronics	1No	6/5/17	Valika electronics #3-70 Nagaram ,Hyderabad
Effect Of Feedback Of DC Servomotor	Valikaelectronics	1 No	6/5/17	Valika electronics #3-70 Nagaram ,Hyderabad
Potentiometer As Error Detector	Valikaelectronics	1 No	6/5/17	Valika electronics #3-70 Nagaram ,Hyderabad
DC Position Control System	Valikaelectronics	1 No	6/5/17	Valika electronics #3-70 Nagaram ,Hyderabad
Time response of second order system	Valikaelectronics	1 No	7/3/18	Valika electronics #3-70 Nagaram ,Hyderabad

Effect of P,PD,PID controller on a second order system	Valikaelectronics	1 No	7/3/18	Valika electronics #3-70 Nagaram ,Hyderabad
Lag & Lead Compensation Unit	Valikaelectronics	1 No	7/3/18	Valika electronics #3-70 Nagaram ,Hyderabad
Transfer function of DC Servo Motor	Valikaelectronics	1 No	7/3/18	Valika electronics #3-70 Nagaram ,Hyderabad

CONTROL SYSTEMS LAB



Power systems lab

In Power Systems Laboratory, students can get concrete ideas about the different system operations and phenomena with application of advanced tools. In this Laboratory students can analyse and design electric and integrated energy systems including their planning, design, control and operation.

Objects of control systems lab

- To impart the practical knowledge of functioning of various power system components
- To determination of various parameters and simulation of load flows, transient stability, LFC and Economic dispatch.

Programme: **B.TECH (ELECTRICAL & ELECTRONICS ENGINEERING)**

LabTitle: **POWER SYSTEMS LAB**

Lab i/c : K.SRAVAN SAI KUMAR					
Name of Equipment	Manufacturer	Quantity	Date of procurement	Cost	Supplier Address & Address of Service Agency
Sequence impedance of 3-phase transformer	Valikaelectronics	1NO	6/7/2016	88,500/-	Valika electronics #3-70 Nagaram ,Hyderabad
Sequence impedance of 3-phase alternator	Valikaelectronics	1NO	6/7/2016	2,21,500/-	Valika electronics #3-70 Nagaram ,Hyderabad
ABCD parameters of transmission network	Valikaelectronics	1NO	6/7/2016	1,83,650/-	Valika electronics #3-70 Nagaram ,Hyderabad
Dielectric strength of transformer oil	Valikaelectronics	1NO	6/7/2016	45,950/-	Valika electronics #3-70 Nagaram ,Hyderabad
Calibration of tong tester	Valikaelectronics	1NO	6/7/2016	87,500/-	Valika electronics #3-70 Nagaram ,Hyderabad
Desk top systems	Hewlett & Packard(HP)	4NO's	31/1/2015	1,01,850/-	Cache Peripherals Pvt. Ltd.
Total cost				7,28,950/-	

POWER SYSTEMS LAB



Electrical simulation lab

Electrical systems are generally very complex in nature and large in size and hence physical models are difficult to realize in laboratory. The aim of this laboratory is to provide required simulation facilities to the students in order to do the necessary analyses of the concepts learnt in their respective courses. This lab facility is being used by B.Tech & M.Tech students of the department for carrying out mini projects, term papers, major projects in addition to meeting the academic lab work.

Objects of electrical simulation lab

- To simulate integrator circuit, differentiator circuit, Boost converter, Buck converter, full convertor and PWM inverter.
- To simulate transmission line by incorporating line, load and transformer models.
- To perform transient analysis of RLC circuit and single machine connected to infinite bus

Electrical measurements lab

Electrical measurement laboratory is setup to supplement the theory course on electrical measurements and instrumentation. This lab deals with different types of electrical bridges, determining the displacement-voltage characteristics of Linear Voltage Differential transformer(LVDT), measurement of three phase active and reactive powers, calibration of single phase energy meter etc. Through hands on experiments with real measuring equipment, students gain practical experience on LVDT and various types of measuring devices.

Objects of electrical measurements lab

- To understand the correct function of electrical parameters and calibration of voltage, current, single phase and three phase power and energy,
- To measurement of electrical characteristics of resistance, inductance and capacitance of a circuits through appropriate methods.
- To understand testing of transformer oil.

Name of Equipment	Manufacturar	Qunantity	Date of procurement	Supplier Address & Address of Service Agency
LVDT trainer kit	HI-Q test Equipment	1NO	14/9/11	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
Strain Gauge trainer kit	HI-Q test Equipment	1NO	14/9/11	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
Schering Bridge Kit	HI-Q test Equipment	2NO'S	14/7/11	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
ANDERSON Bridge Kit	HI-Q test Equipment	2NO'S	14/7/11	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
AC bridge	HI-Q test Equipment	1NO	14/7/11	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
Calibration and testing of 1-phase Energy meter	HI-Q test Equipment	1NO	17/8/11	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
Calibration of dynamometer Power factor meter	HI-Q test Equipment	1NO	17/8/11	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad

3- Φ Reactive power with 1- Φ wattmeter Kit	HI-Q test Equipment	1NO	17/8/11	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
Measurement of Power &Choke Coil Parameters	HI-Q test Equipment	1NO	17/8/11	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
Crompton D.C. Potentiometer	HI-Q test Equipment	2NO'S	1/11/11	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
Kelvin Double bridge kit	HI-Q test Equipment	2NO'S	1/11/11	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
Galvano meter	Valikaelectronics	3NO'S	11/4/2017	HI-Q Test Equipment PVT LYD .Plot No: 71&72 ,industrial área cherlapally ,kapra, Hyderabad
Schering Bridge	Valikaelectronics	1NO	7/3/2018	Valika electronics #3-70 Nagaram ,Hyderabad
Anderson Bridge	Valikaelectronics	1NO	7/3/2018	Valika electronics #3-70 Nagaram ,Hyderabad
Kelvins Double bridge	Valikaelectronics	1NO	7/3/2018	Valika electronics #3-70 Nagaram ,Hyderabad
LVDT Trainer kit	Valikaelectronics	1NO	7/3/2018	Valika electronics #3-70 Nagaram ,Hyderabad
Crompton DC Potentiometer	Valikaelectronics	1NO	7/3/2018	Valika electronics #3-70 Nagaram ,Hyderabad

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