



# 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

Name of the lab : Control Systems Lab

To provide hands-on experience and reinforce theoretical knowledge about designing, analysing, and optimizing control systems using practical experiments and simulations, ultimately enhancing students' understanding of real-world applications. Studies can include how a device can be used to control, or regulate the behaviour of a Open Loop & Close Loop System.





### Major Equipment of the Lab

S.No	Name of the equipment	quantity
1.	A.C Servo motor trainer kit	1 NO
2.	Experiment To Draw Speed To Rqve Characteristics of Two Phase AC Servo Motor	1 NO
3.	PLC Trainer With Demonstrators	2 NO
4.	Traffic Light Control System	1 NO
5.	PLC Trainer With Demonstrators	2 NO
6.	Data Acquisition System	1 NO
7.	PLC Real Timer Application Level Control	1 NO
8.	30 MHz Dual Trace Oscilloscope Model HM 203G, Make : Scientific	2 NO
9.	30 MHz Dual Trace Oscilloscope Model HM 203G, Make : Scientific	6 NO
10.	D.C Speed control MAKE: TECHNO	2 NO
11.	DC Motor control Module	1 NO
12.	Digital PID Controller MAKE: EMSYS	1 NO
13.	Digital Oscilloscope 2ch,Scientific sm-502,50MHZ	5 NO
14.	Effect of P,PD,PI and PID contorller on the second order system training kitMAKE: Techno	2 NO
15.	Lag – lead compensation trainer kitMAKE:TECHNO	2 NO
16.	Lead – lag compensation trainer kitMAKE: EMSYS	1 NO
17.	Potentiometric.Error detectorMAKE: Techano	2 NO
18.	Microprocessor based programmable Logic Controller. MAKE: Lab tech	1 NO
19.	Programmable Logic Controller	1 NO
20.	P,PI,PID Control trainer Kit MAKE: EMSYS	1 NO
21.	Realy control systemMAKE: Techno	2 NO
22.	Stepper motor study unit a) stepper study unit & stepper motor	2 NO
23.	b) 8085 Microprocessor kit with software in EPROM MAKE: Techno	2 NO
24.	Simulation of transfer functionusing op- amplifier trainer kit MAKE;Techno	2 NO
25.	Effcet of feedback dc servo motor trainer kit	2 NO
26.	Synchro Transmitter & Receiver Pair MAKE: HEM	1 NO

27.	Time response of a second order system trainer kit (Lss) MAKE; Techno	2 NO
28.	Transfer function of DC motor trainer kit MAKE;Techno	2 NO
29.	Temperture controller using PID trainer kitMAKE;Techno	2 NO
30.	Temperature control Module	1 NO

**B.Tech.(IV Sem) 23EE56-Control Systems Lab**

**List of Experiments**

Any 10 of the following experiments are to be conducted:
1. Analysis of Second order system in time domain
2. Characteristics of Synchros
3. Effect of P, PD, PI, PID Controller on a second order systems
4. Design of Lag and lead compensation – Magnitude and phase plot
5. Transfer function of DC motor
6. Root locus, Bode Plot and Nyquist Plot for the transfer function of systems up to 5thorderusing MATLAB.
7. Kalman’s test of Controllability and Observability using MAT LAB.
8. Temperature controller using PID
9. Characteristics of magnetic amplifiers
10. Characteristics of AC servo motor
11. Characteristics of DC servo motor
12. Study and verify the truth table of logic gates and simple Boolean expressions using PLC.

LAB INCHARGE  
LAB TECHNICIAN

Mrs.K.S.L.Lavanya  
Mr.MOHD.RASOOL