ATME College of Engineering

Department of EEE
Emitting Elite Energy

Department of Electrical and Electronics Engineering

Lesson Plan –BEEL606-CONTROL SYSTEM LAB, AY: 2025-16

	Course with Code: CONTROL SYSTEM LAB- BEEL606				Faculty: Dr. Praveen Kumar M		Semester & Section: IV	
Lab Session No.	**Date planned (DD/MM)**	**Experiment to be covered**	**TLP Planned**	**Lab Session No..**	**Date planned (DD/MM)**	Experiment covered	**TLP Executed**	
	Lab Sessions							
1		Experiment to draw the Speed Torque Characteristics of (i) AC servo motor (ii) DC servo motor.	Practical Session					
2		Experiment to draw synchro-pair characteristics	Practical Session					
3		Experiment to determine frequency response of a second order system.	Practical Session					
4		a. To simulate a typical second order system and determine step response and evaluate time response specifications. b. To evaluate the effect of additional poles and zeros on time response of second order system. c. To evaluate the effect of pole location on stability d. To evaluate the effect of loop gain of a negative feedback system on stability.	Practical Session					
5		To simulate a second order system and study the effect of (a) P, (b) PI, (c) PD and (d) PID controller on the step response	Practical Session					
6		a. To design a passive RC lead compensating network for the given specifications, viz, the maximum phase lead and the frequency at which it occurs and to obtain the frequency response. b. To determine experimentally the transfer	Practical Session					

		function of the lead compensating network.						
7		a. To design a passive RC lag compensating network for the given specifications, viz, the maximum phase lag and the frequency at which it occurs and to obtain the frequency response. b. To determine experimentally the transfer function of the lag compensating network	Practical Session					
8		Experiment to draw the frequency response characteristics of the lag – lead compensator network and determination of its transfer function.	Practical Session					
9		a. To simulate a D.C. Position control system and obtain its step response. b. To verify the effect of input waveform, loop gain and system type on steady state errors. c. To perform trade-off study for lead compensator. d. To design PI controller and study its effect on steady state error.	Practical Session					
10		a. To examine the relationship between open-loop frequency response and stability, open-loop frequency and closed loop transient response. b. To study the effect of open loop gain on transient response of closed loop system using root locus.	Practical Session					
11		a. To study the effect of open loop poles and zeros on root locus contour b. Comparative study of Bode, Nyquist and root locus with respect to stability	Practical Session					