

COURSE CODE: 1151EE305	COURSE TITLE: CONTROL & INSTRUMENTATION LAB	L	T	P	C
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COURSE CATEGORY:					
Program Core					
PREAMBLE :					
The aim of this lab is to fortify the students with an adequate work experience in the measurement of different quantities and also the expertise in Digital simulation of systems					
PREREQUISITE COURSES:					
Circuit Analysis Lab					
RELATED COURSES:					
DC Machines & Transformers Lab					
COURSE EDUCATIONAL OBJECTIVES :					
The students should be made <ul style="list-style-type: none"> • To done the Measurement of displacement, resistance, inductance, torque and angle • To give exposure to AC, DC bridges measurement. • To Design of compensators • To Determine the transfer function of Electrical Machines 					
COURSE OUTCOMES :					
Upon the successful completion of the course, students will be able to:					
CO Nos.	Course Outcomes	Knowledge Level (Based on revised Bloom's Taxonomy)			
CO1	Determine the transfer function of Electrical Machines	S3			
CO2	Design of compensator, first and second order systems	S3			
CO3	Visually check the sinusoidal ac voltage using C.R.O.	S2			
CO4	Practically measure the different parameters using varied bridges	S2			
CO5	Calculate the BH curve using solenoid	S2			
COURSE CONTENT:					
LIST OF EXPERIMENTS					
<ol style="list-style-type: none"> 1. Measurement of phase difference and frequency of a sinusoidal ac voltage using C.R.O. 2. Measurement of voltage, current and resistance using dc potentiometer 3. Measurement of low resistance by Kelvin's double bridge 4. Measurement of inductance through various bridges (Maxwell's bridge, Hay's bridge, Anderson's bridge) 5. Measurement of capacitance through various bridges (Owen's bridge, De Sauty bridge, Schering bridge) 6. Determination of BH curve using solenoid 					

7. Determination of transfer function of DC machines
8. Determination of transfer function of servo motors
9. Digital simulation of first and second order systems using time and frequency response methods and obtaining the performance specifications
10. Design of compensator (lead, lag, lag-lead) of a system by digital simulation