

Lesson Plan

Name of the Faculty: Kanwal Sachdeva

Discipline: Instrumentation & Control

Semester: 3rd

Subject: Basic Of Control System

Lesson Plan Duration : 15 weeks(from Sept 2022 to Jan 2023)

Work Load (lecture/practical)per week (in hours) : Lectures- 04, practical- 03

Week	Lecture Day	Theory Topic (including assignment/test)	Practical week	Practicals Topic
1st	1st	Brief introduction about subject and syllabus	1	Study of characteristic of servomotor
	2nd	Basic elements of control system, open loop control system		
	3rd	closed loop control system, control system terminology		
	4th	revision		
2nd	5th	manually controlled closed loop systems	2	Characteristics and speed control of a stepper motor
	6th	automatic controlled closed loop systems		
	7th	basic elements of a servo mechanism, Examples of automatic control systems		
	8th	revision		
3rd	9th	linear systems	3	To demonstrate the synchro characteristic and use a synchro pair as error detector
	10th	non-linear systems, control system examples from chemical systems		
	11th	mechanical systems		
	12th	electrical systems		
4th	13st	introduction to laplace transform	4	File checking
	14th	revision		
	15th	Class test		
	16th	Ac servomotor-Torque speed characteristics		
5th	17th	Dc servomotor-Torque speed characteristics	5	Query of experiment 1,2 & 3 and Repeat again
	18th	Assignment discussion		
	19th	stepper motor-Variable Reluctance type		
	20th	Stepper motor-Permanent magnet motor type		
6th	21th	Potentiometer-Characteristics of Potentiometer	6	Measurement of speed control of motor with tachometric feed back
	22th	Tachometer-AC and DC Tachometer		
	23th	Transfer function, block diagram		
	24th	revision		
7th	25th	reduction of block diagram	7	Study of a DC speed control system
	26th	problems on block diagram		
	27th	Mason's formula signal flow graph		
	28th	Standard test signals		
8th	29th	time response of first order system	8	Simulation of a position control system with PC
	30th	revision		
	31st	time constant		
	32nd	time response of second order system		

9th	33rd	time response specifications	9	Study of ON-OFF controlle
	34th	steady-state errors		
	35th	Revision		
	36th	class test		
10th	37th	error constants	10	File checking
	38th	problems in first order system		
	39th	problems in second order system		
	40th	revision		
11th	41th	Stability	11	feedback from students
	42th	Routh Hurwitz Criterion		
	43th	Root Locus		
	44th	Bode Plotting using semi log graph paper		
12th	45th	Bode Plotting using semi log graph paper	12	File checking
	46th	Revision		
	47th	Assignment discussion		
	48th	viva voice		
13th	49th	class test	13	Viva voice
	50th	Feedback from students		
	51st	revision		
	52nd	revision		
14th	53rd	Revision	14	Viva voice
	54th	Assignment discussion		
	55th	viva voice		
	56th	class test		
15th	57th	revision	15	Viva voice
	58th	revision		
	59th	revision		
	60th	revision		