манама	YA INST	ITUTE	OF MEDICAL AND TECHNICAL SCIENCE,	NUAPAD	A		
			LESSION PLAN				
DISCIPLINE : Elect. Engg.	SEMESTER : 6TH SEM		NAME OF TEACHING FACULTY : SATISH KUMAR BEHERA				
SUBJECT : CONTROL SYSTEM ENGINEERING	NO. OF DAYS /PER WEEK CLASS ALLOTED : 05		SEMESTER FROM Dt.13/02/23 TO Dt.23/05/23 NO OF	WEEKS :	15		
WEEK	CLASS DAY	DATE	THEORY / PRACTICAL TOPICS	SIGN	REMARKS		
1			1. SIGNAL FLOW GRAPH.				
	1st		1.1 Review of block diagrams and transfer functions of multivariable systems.				
	2nd		multivariable systems.				
	3rd		1.2 Construction of signal flow graph.				
	4th		1.2 Construction of signal flow graph.				
	5th		1.3 Basic properties of signal flow graph.				
	1st		1.3 Basic properties of signal flow graph.				
	2nd		1.4 Signal flow graph algebra.				
	3rd		1.4 Signal flow graph algebra.				
2	4th		1.5 Construction of signal flow graph for control system.				
	5th		1.5 Construction of signal flow graph for control system.				
			TIME RESPONSE ANALYSIS.				
	1st		2.1 Time response of control system.				
	2nd		1. 2 Standard Test signal. 2.2.1. Step signal, 2.2.2. Ramp Signal 2.2.3. Parabolic Signal 2.2.4. Impulse Signal				
3	2rd		sten response		and the second second		
	Ath		2 3 2. Unit impulse response.				
	5th		2.4 Time response of second order system to the unit step input.2.4.1. Time response specification.				
4	1st		2.4.2. Derivation of expression for rise time, peak time, peak overshoot, settling time and steady state error. 2.4.3. Steady state error and error constants.				
			2.5 Types of control system. [Steady state errors in Type-				
	2nd		0, Type-1, Type-2 system]				
	3rd		2.6 Effect of adding poles and zero to transfer function.				
	4th		2 . 7 Response with P, PI, PD and PID controller				
	5th		2 . 7 Response with P, PI, PD and PID controller 5.2 Prepare and estimate for providing single phase supply of load of 5 KW (light, fan, socket) to a single				
	1st		stored residential building.				

WEEK	CLASS DAY	DATE	THEORY / PRACTICAL TOPICS	SIGN	REMARKS	
5			5.2 Prepare and estimate for providing single phase			
			supply of load of 5 KW (light, fan, socket) to a single			
	2nd		stored residential building.			
			FREQUENCY RESPONSE ANALYSIS			
			4.1 Correlation between time response and frequency			
	3rd		response.			
			4.1 Correlation between time response and frequency			
	4th		response.			
	5th		4.2 Polar plots.			_
06	1st		4.2 Polar plots.			_
	2nd		4.3 Bode plots.			_
	3rd		4.3 Bode plots.			
	4th		4.4 All pass and minimum phase system.			
	5th		4 . 4 All pass and minimum phase system.			-
	1st		4.5 Computation of Gain margin and phase margin.			-
	2nd		4.5 Computation of Gain margin and phase margin.			-
7	3rd		4 . 6 Log magnitude versus phase plot.			-
	4th		4 . 6 Log magnitude versus phase plot.			
	5th		4.7 Closed loop frequency response.			-
	1st		4.7 Closed loop frequency response.			-
			NYQUIST PLOT		1	-
	2nd		5.1 Principle of argument.			
08	3rd		5.2 Nyquist stability criterion.			-
	4th		5.2 Nyquist stability criterion.			-
	5th		5.3 Niquist stability criterion applied to inverse polar plot.			
09	1st		5.3 Niquist stability criterion applied to inverse polar plot.			-
			5.4 Effect of addition of poles and zeros to G(S) H(S) on			
	2nd		the shape of Niquist plot.			-
	The second second	and the	5.4 Effect of addition of poles and zeros to G(S) H(S) on			
	3rd		the shape of Niquist plot.			-
	4th		5.5 Assessment of relative stability.			-
	5th		5.5 Assessment of relative stability.			-
10	1st		5.6 Constant M and N circle			-
	2nd		5.6 Constant M and N circle			
	3rd		5.7 Nicholas chart			-

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