

Discipline: Electrical Semester: 6th Name of the teaching faculty:- Sushree Sangiti Panda
 Subject: CSE No. of days/week: 06 Semester from:- 10.03.2022 to 10.06.2022
 Section allotted: 06 No. of weeks:- 14

Weeks class day Theory / Practical Topics

	1 st	
7.3.22	2 nd	
to	3 rd	
12.3.22	4 th	Fundamental of Control System:- Classification of Control System.
	5 th	<ul style="list-style-type: none"> Open loop system & closed loop system & its comparison.
	6 th	<ul style="list-style-type: none"> Effects of feedback.
	1 st	
14.3.22	2 nd	<ul style="list-style-type: none"> Standard test signals (step, Ramp, Parabolic, Impulse)
to	3 rd	<ul style="list-style-type: none"> Servo mechanism.
19.3.22	4 th	Mathematical model:- Transfer function & Impulse response.
	5 th	<ul style="list-style-type: none"> Properties, Advantages, Disadvantages of Transfer function.
	6 th	Dola Purina Holi
	1 st	
21.3.22	2 nd	<ul style="list-style-type: none"> Poles and Zeros of Transfer function.
to	3 rd	Continue
26.3.22	4 th	<ul style="list-style-type: none"> Simple problems of transfer function of network.
	5 th	<ul style="list-style-type: none"> Continue
	6 th	<ul style="list-style-type: none"> Mathematical modelling of Electrical systems (R, L, C, Analogous Systems)
	1 st	
28.03.22	2 nd	Control System Components:- Components of Control System.
to	3 rd	<ul style="list-style-type: none"> Gyroscope, Synchros, Tachometer,
2.4.22	4 th	<ul style="list-style-type: none"> DC Servomotors, AC Servomotors.
	5 th	Block Diagram & BKG:- Definition of basic elements of Block Diagram.
	6 th	Vikal Divas <ul style="list-style-type: none"> Canonical form of closed loop systems.
	1 st	
4.4.22	2 nd	<ul style="list-style-type: none"> Rules for block diagram reduction.
to	3 rd	<ul style="list-style-type: none"> Procedure for Reduction of Block Diagram.
		<ul style="list-style-type: none"> Simple problem for equivalent transfer function.

Weeks	Class Day	Theory / Practical Topics
	4 th	Continue
9.4.22	5 th	• Basic definition in Signal flow graph & properties.
	6 th	• Construction of signal flow graph from block diagram.
	1 st	Continue
11.4.22	2 nd	• Mason's Gain formula.
to	3 rd	• Simple problems in Signal flow graph for networks.
16.4.22	4 th	Maha Visubha Sankranti
	5 th	Good Friday
	6 th	Continue
	1 st	Time response analysis :- Time response of Control system.
18.4.22	2 nd	• step signal
to	3 rd	• Ramp Signal
23.4.22	4 th	• Parabolic Signal
	5 th	• Impulse Signal
	6 th	• Time response of 1 st order system with Unit step response.
	1 st	• Time response of 1 st order system with unit Impulse response ^{response} .
25.4.22	2 nd	Time response of 2 nd order system to the unit step input.
to	3 rd	• Time response specifications.
30.4.22	4 th	• Derivation of expressions for rise time, Peak time
	5 th	• Derivation of expressions for Peak overshoot, setting time, ^{error} steady state
	6 th	• Steady state error and error constants.
	1 st	• Steady state error in Type-0 system.
2.5.22	2 nd	• steady state error in Type-1 System.
to	3 rd	• steady state error in Type-2 system.
7.5.22	4 th	• Effects of adding poles and zero to transfer function.
	5 th	• Response with P, PI, PD and PID Controller.
	6 th	Continue

Weeks

class day,

Theory / Practical Topics

1st

Continue

09.5.22

2nd

Continue

to

3rd

Root locus Technique :- Root Locus Concept.

14.5.22

4th

• Construction of root loci.

5th

• Rules for construction of the root locus.

6th• Effect of adding poles & zeros to $G(s)$ and $H(s)$.1st

Duetta Purvina

16.5.22

2ndFrequency response analysis :- Correlation betⁿ time response & frequency response.

to

3rd

• Polar plots.

21.5.22

4th

Continue

5th

• Bode plots.

6th

Continue

1st

• All pass and minimum phase systems.

23.5.22

2nd

• Computation of Gain margin and Phase Margin.

to

3rd

• Log magnitude versus phase plot.

28.5.22

4th

• Closed loop frequency response.

5th

Continue

6th

Nyquist plot :- Principle of argument.

1st

Sabitri Amabarya

30.5.22

2nd

Continue

to

3rd

• Nyquist stability Criterion.

04.06.22

4th

• Nyquist stability Criterion applied to inverse polar plot.

5th• Effect of addⁿ of poles & zeros to $G(s)H(s)$ on the shape of Nyquist plot.6th

Continue

1st

• Assessment of relative stability.

06.6.22

2nd

• Constant M and N circle

to

3rd

Continue

Weeks

class say

Theory / Practical Topics

11.6.22

4th

Nicholas chart

5th

Continue

6th

Verified
10/03/2022