

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH



PROGRESS REGISTER Session-2021-2022

Discipline: Electrical Engg. Semester: 5th

Name of the Teaching Faculty: Subhasis Nanda.

Subj. - Control System Engg.

Section - A

Subject: CONTROL SYSTEM ENGS. No. of Days/per week class allotted 05

Semester From Date : 14/03/2022 To Date : 30/06/2022 No. of Weeks : 15

Date	Topics to be covered as per Lesson Plan	Topics actually covered	Points/contents Discussed (in brief)	Signature of Teacher
11/03/2022	Introduction to Control System	Introduction to Control system	System, Control system with examples.	<u>S. S. Sarda</u> 11/03/2022
12/03/2022	Classification of Control System.	- do -	open-closed loop Linear-non linear Time invariant-invariant SISO - MIMO.	<u>S. S. Sarda</u> 12/03/2022
15/03/2022	open loop and closed loop Control syst.	- do -	Detail study of O.L and C.L CS with diagram.	<u>S. S. Sarda</u> 15/03/2022
16/03/2022	Effect of feedback standard Test signal.	Effect of feedback.	Benefits of feedback system.	<u>S. S. Sarda</u> 16/03/2022
17/03/2022	Servo Mechanism.	- do -	Synthesizer, Error detector.	<u>S. S. Sarda</u> 17/03/2022
22/03/2022	Transfer Funct. Impulse Funct.	- do -	Defination of T.F, How to find T.F using I.F.	<u>S. S. Sarda</u> 22/03/2022
23/03/2022	Poles, zeros, Types, Order.	- do -	Explain the terms and their defination.	<u>S. S. Sarda</u> 23/03/2022
24/03/2022	Mathematical Modelling of Electrical Sys.	- do -	KVL, KCL, Current, voltage, charge, flux system	<u>S. S. Sarda</u> 24/03/2022
25/03/2022	Transfer Funct. of a Electrical n/w	- do -	example of a electrical n/w to find T.F.	<u>S. S. Sarda</u> 25/03/2022
26/03/2022	Components of Control System.	- do -	Regulation, Plant, Feedback, error detector.	<u>S. S. Sarda</u> 26/03/2022
29/03/2022	Tachometer, DC Servomotor	- do -	- do -	<u>S. S. Sarda</u> 29/03/2022

Subject: Control System Engr. No. of Days/per week class allotted 05

Semester From Date: 14/03/2020 To Date: 30/06/2020 No. of Weeks: 15

Date	Topics to be covered as per Lesson Plan	Topics actually covered	Points/contents Discussed (in brief)	Signature of Teacher
30/03/20	AC Servomotors	-do-	-do-	<u>S. Sivas</u> 30/3/20
31/03/20	Synoscope, Synchronous.	-do-	-do-	<u>S. Sivas</u> 31/03/20
02/04/20	Rules of Block Diagram Reduction	-do-	Shifting, merging, demerging Rules.	<u>S. Sivas</u> 02/04/20
05/04/20	Procedure	-do-	How to perform the reduction steps.	<u>S. Sivas</u> 05/04/20
06/04/20	Problem Practise	-do-	-do-	<u>S. Sivas</u> 06/04/20
07/04/20	Elements of Signal flow Graph.	-do-	node, branch, path, forward path, loop, non touch loop.	<u>S. Sivas</u> 07/04/20
08/04/20	Drawing of SFG from $G(s)$ and $H(s)$.	-do-	explain using examples for each case.	<u>S. Sivas</u> 08/04/20
09/04/20	Mason's Gain Formula.	-do-	-do-	<u>S. Sivas</u> 09/04/20
13/04/20	Problem Practise	-do-	-do-	<u>S. Sivas</u> 13/04/20
16/04/20	Time Response of C.S.	-do-	steady state, transient state, max overshoot.	<u>S. Sivas</u> 16/04/20
19/04/20	Standard Test Signal.	-do-	Step, Ramp, Parabolic inputs.	<u>S. Sivas</u> 19/04/20

Subject: Control system By By No. of Days/per week class allotted 05

Semester From Date : 14/03/20 To Date : 30/04/20 No. of Weeks : 15

Date	Topics to be covered as per Lesson Plan	Topics actually covered	Points/contents Discussed (in brief)	Signature of Teacher
20/04/20	T.R of first order control system.	-do-	explain with example.	<u>S. Sand</u> 20/04/20
22/04/20	For unit step input	-do-	Derivation with example.	<u>S. Sand</u> 22/04/20
23/04/20	For Ramp input	-do-	Derivation with example.	<u>S. Sand</u> 23/04/20
26/04/20	Time Response of second order control system.	-do-	explanatory.	<u>S. Sand</u> 26/04/20
25/04/20	For unit step input	-do-	Detailed Derivation	<u>S. Sand</u> 25/04/20
28/04/20	Rise time, Peak time,	-do-	Derivation for rise time peak time.	<u>S. Sand</u> 28/04/20
29/04/20	Under Damped, Critically Damped, over Damped case.	-do-	T-R with various values of ζ .	<u>S. Sand</u> 29/04/20
04/05/20	steady state response, steady state response & error const.	-do-	Ess, Position, velocity, acceleration error constant.	<u>S. Sand</u> 04/05/20
05/05/20	Condition for stability.	-do-	stability of position of location of roots.	<u>S. Sand</u> 05/05/20
06/05/20	Routh Hurwitz criterion.	-do-	Routh array Problem Mech.	<u>S. Sand</u> 06/05/20
07/05/20	Problem Practice	-do-	-do-	<u>S. Sand</u> 07/05/20

Subject: Control System Engg No. of Days/per week class allotted 05

Semester From Date : 14/03/2022 To Date : 30/06/2022 No. of Weeks : 15

Date	Topics to be covered as per Lesson Plan	Topics actually covered	Points/contents Discussed (in brief)	Signature of Teacher
10/05/2022	Root locus. Concept.	- do -	explanatn.	<u>Saxena</u> 10/05/2022
11/05/2022	Properties.	- do -	Root locus Properties.	<u>Saxena</u> 11/05/2022
12/05/2022	Steps of Root locus	- do -	steps 1-5	<u>Saxena</u> 12/05/2022
13/05/2022	11	- do -	steps 6-10.	<u>Saxena</u> 13/05/2022
14/05/2022	Calculatn of each step.	- do -	Finding the values of 10 stem.	<u>Saxena</u> 14/05/2022
15/05/2022	Drawing of root locus	- do -	Plotting the points to a graph.	<u>Saxena</u> 15/05/2022
19/05/2022	Effect of adding poles & zeros.	- do -	Shifting of roots locus by addition of poles & zeros.	<u>Saxena</u> 19/05/2022
20/05/2022	Frequency Response analysis.	- do -	explanatn	<u>Saxena</u> 20/05/2022
22/05/2022	Specification.	- do -	Resonance peak, resonant frequency, Bandwidth, Cut off frequency	<u>Saxena</u> 22/05/2022
23/05/2022	Co-relation b/w. T-R & f-R	- do -	- do -	<u>Saxena</u> 23/05/2022
26/05/2022	Bode Plot.	Calculatn of Magnitude plot.	- do -	<u>Saxena</u> 26/05/2022

Subject: Control system EnggNo. of Days/per week class allotted 05Semester From Date : 17/03/2022To Date : 30/03/2022No. of Weeks : 15

Date	Topics to be covered as per Lesson Plan	Topics actually covered	Points/contents Discussed (in brief)	Signature of Teacher
28/05/2022	Bode Plot	Drawing of magnitude plot to a unity gain	- do -	<u>S. S. S. S.</u> 28/05/2022
29/05/2022	Drawing of Bode plot to a unity gain	Calculation for phase	- do -	<u>S. S. S. S.</u> 29/05/2022
30/05/2022	Problem Practice.	Problem Practice	Problem Practice.	<u>S. S. S. S.</u> 30/05/2022
05/06/2022	Computation of Gain Margin phase margin	- do -	Definition of GM, PM and finding it from Bode Plot.	<u>S. S. S. S.</u> 05/06/2022
06/06/2022	Polar Plot	- do -	Plotting the frequency response of a C.S. to a polar coordinate.	<u>S. S. S. S.</u> 06/06/2022
07/06/2022	Problem Practice.	Problem Practice	Problem Practice.	<u>S. S. S. S.</u> 07/06/2022
11/06/2022	All pass and Minimum phase system	- do -	explaining various type of system.	<u>S. S. S. S.</u> 11/06/2022
12/06/2022	Principle of argument	- do -	Definition & explanation.	<u>S. S. S. S.</u> 12/06/2022
14/06/2022	Nyquist stability Criterion.	- do -	statement & explanation	<u>S. S. S. S.</u> 14/06/2022
19/06/2022	Nyquist plot	- do -	application of Nyquist Criterion to polar form	<u>S. S. S. S.</u> 19/06/2022
21/06/2022	effect of adding poles & zero	- do -	increase/decrease of no. of encirclements.	<u>S. S. S. S.</u> 21/06/2022

Subject: Control System By No. of Days/per week class allotted 05

Semester From Date : 14/03/2021 To Date : 30/06/2021 No. of Weeks : 15

Date	Topics to be covered as per Lesson Plan	Topics actually covered	Points/contents Discussed (in brief)	Signature of Teacher
22/06/2021	Problem Praetice	Problem Praetice	Problem Praetice	<u>S. Sand</u> 22/06/2021
23/06/2021	Constant M/N Circle	-do-	-do-	<u>S. Sand</u> 23/06/2021
24/06/2021	Nicholson Chart	-do-	-do-	<u>S. Sand</u> 24/06/2021
25/06/2021	PID controller.	-do-	-do-	<u>S. Sand</u> 25/06/2021
28/06/2021	Sensitivity of control system.	-do-	-do-	<u>S. Sand</u> 28/06/2021
29/06/2021	Problem Praetice.	-do-	-do-	<u>S. Sand</u> 29/06/2021
30/06/2021	Doubt clear	Doubt clear	Doubt clear	<u>S. Sand</u> 30/06/2021