

LESSON PLAN(Summer -2026)

VENUS GROUP OF EDUCATIONAL & RESEARCH INSTITUTES,BAHANAGA,BALASORE-756042

Discipline:Electronics & telecomm. engg		Semester:6th	Name of teaching faculty: Anil kumar barik
Subject:Control System Engineering(CSE)		No. of days per week class allotted:5	Semester from date:22.12.2025 To date: 18.04.2026 No of weeks: 12
SL.NO	WEEK	CLASS DAY	TOPICS
1	1st	1ST	Introduction to control system and its operation
2		2nd	Open loop and closed loop control systems
3		3rd	Comparision between open loop and closed loop control systems
4		4th	Details of unit step, ramp,parabolic and impulse function
5		5th	Explaining the concept of servomechanism
6	2nd	1ST	Transfer and Impulse Function and its properties
7		2nd	Advantages and dis advantages of transfer function
8		3rd	Concept of poles and zeros of transfer function
9		4th	Stability determination using poles and zeros
10		5th	Problems and mathematical modelling of Electrical systems (R, L, C Analogous system
11	3rd	1st	Components of control systems
12		2nd	Details of Gyroscope, Synchronous, Tachometer
13		3rd	Concept Associated with Dc servometer and ac servometer
14		4th	Basic elements related to block diagram
15		5th	Canonical form of closed loop system system and Block diagram reduction technique.
16	4th	1st	Concept and procedure for block diagram reduction
17		2nd	Simple problem of equivalent transfer function.
18		3rd	Concept of signal flow graph and its properties associated with it
19		4th	Details of mason gain formula.
20		5th	Construction of signal flow graph from block diagram
21	5th	1st	Simple problem of equivalent transfer function.
22		2nd	Time Response analysis of control system
23		3rd	Standard step and ramp signal
24		4th	standard paraboloc and impulse signal and time response with order system concept
25		5th	Time response with first order unit step response signal
26	6th	1st	Time response with unit step impulse signal

27		2nd	Specification of time response
28		3rd	Derivation of rise time, peak time, peak overshoot time, Steady state time and error
29		4th	Types of control system (Type-0, Type-1, Type-2, Type-3)
30		5th	Steady state error and error constants
31	7th	1st	Effect of adding poles and zeros to transfer function
32		2nd	Response of P and PI controller
33		3rd	Response of PD and PID controller
34		4th	Concept of root locus
35		5th	Construction of root loci using formula and technique
36	8th	1st	Various Rules associated with root loci
37		2nd	Effect of adding poles and zeros
38		3rd	Simple Problems associated with root loci
39		4th	Comparison between Time response and frequency response
40		5th	Concept of frequency response analysis
41	9th	1st	Concept of Polar plot
42		2nd	Rules and technique associated with formation of polar plot
43		3rd	Concept of bode plot
44		4th	Concept of formation of bode plot and techniques associated with it
45		5th	All pass and minimum phase system
46	10th	1st	Concept of finding gain margin and phase margin
47		2nd	Comparison between gain margin and phase margin
48		3rd	Concept of log magnitude and phase plot and their comparison
49		4th	Closed loop frequency response analysis
50		5th	Simple problems on Polar plot and Bode plot
51	11th	1st	Concept of nyquist plot
52		2nd	Principle of argument associated with it
53		3rd	Rules and technique associated with Construction of nyquist plot
54		4th	Nyquist stability criterion and some examples of it
55		5th	Concept of inverse polar plot applied in nyquist stability criterion
56	12th	1st	Effect of addition of poles and zeros to $G(s)$, $H(s)$ on the shape of nyquist plot
57		2nd	Assessment of relative stability
58		3rd	Concept Constant M and N circle
59		4th	Concept of Nicholas chart.
60		5th	Solved Numerical Problems

Sign.Of Faculty

Sign.OF Principal