

DISCIPLINE-- ELECTRICAL ENGG	SEMESTER- 4 TH	NAME OF THE TEACHING FACULTY- SIBANI PANDA,LECT (ELECT)	
SUB- LINEAR CONTROL SYSTEM	NO OF CLASSES/ WEEK – 3P	TIME PERIOD- 22.12.2025 TO 18.04.2026 NO OF WEEKS- 17 WEEK	
SL NO	CLASS DAY	TOPIC TO BE COVERED	REMARK
1	1 ST DAY 2 ND DAY 3 RD DAY	Introduction to Laplace Transform. Open loop and closed loop control systems: Feedback principle, Transfer function of LTI systems Mechanical and Electromechanical systems Force voltage and force current analogy	
2	1 ST DAY 2 ND DAY 3 RD DAY	block diagram representation block diagram reduction	
3	1 ST DAY 2 ND DAY 3 RD DAY	signal flow graph Mason's gain formula Characteristics equation.	
4	1 ST DAY 2 ND DAY 3 RD DAY	Control system components: DC and AC servo motors synchro ,gyroscope – stepper motor - Tacho generator.	
5	1 ST DAY 2 ND DAY 3 RD DAY	Time domain analysis of control systems Transient and steady state responses time domain specifications	
6	1 ST DAY 2 ND DAY 3 RD DAY	first and second order systems step responses of first and second order systems.	
7	1 ST DAY 2 ND DAY 3 RD DAY	Error analysis: Steady-state error analysis static error coefficient of type 0, 1, 2 systems	
8	1 ST DAY 2 ND DAY 3 RD DAY	Dynamic error coefficients. Concept of stability Time response for various pole locations	
9	1 ST DAY 2 ND DAY 3 RD DAY	stability of feedback system Routh's stability criterion INTERNAL ASSESSMENT 1	
10	1 ST DAY 2 ND DAY 3 RD DAY	Root locus and Polar plot: General rules for constructing Root loci stability from root loci	
11	1 ST DAY 2 ND DAY 3 RD DAY	effect of addition of poles and zeros. Lag, Lead and Lead-Lag compensators	
12	1 ST DAY 2 ND DAY 3 RD DAY	Nyquist stability criterion Nichols chart	
13	1 ST DAY 2 ND DAY 3 RD DAY	Non-minimum phase system - transportation lag. Frequency domain analysis: Frequency domain specifications	
14	1 ST DAY 2 ND DAY 3 RD DAY	Analysis based on Bode plot INTERNAL ASSESSMENT -2	
15	1 ST DAY 2 ND DAY 3 RD DAY	Log magnitude vs. phase plot State space model	
16	1 ST DAY 2 ND DAY 3 RD DAY	State Transition matrix	
17	1 ST DAY 2 ND DAY 3 RD DAY	REVISION	

Sani
20.12.2025