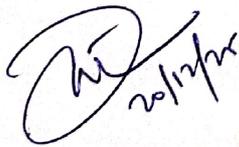


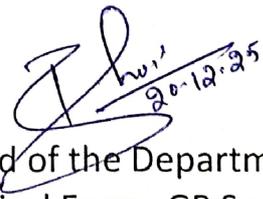
ACADEMIC SESSION: 2025-26

Discipline: Electrical engineering	Semester: 4 th	Name of the Teaching Faculty: Sri Chandramani Mahapatra (Lect. Stage II)
Subject: Linear Control System	No. of days / week class allotted	Semester From date: 22/12/2025 to 18/04/2026 Nos. of Weeks per semester: 15
Week	Class Day	Theory Topics
1 ST	1 st	I. Introduction to laplace transform:
	2 nd	Open loop and closed loop control systems: Feedback principle,
	3 rd	Transfer function of LTI systems
2 ND	1 st	Mechanical and electromechanical systems, force voltage and force current analogy
	2 nd	Block diagram representation
	3 rd	Block diagram reduction
3 RD	1 st	Signal flow graph
	2 nd	Mason's gain formula
	3 rd	Characteristic equation.
4 TH	1 st	Revision
	2 nd	II. Control system components:
	3 rd	Dc and ac servo motors
5 TH	1 st	Synchro
	2 nd	Gyroscope
	3 rd	Stepper motor, tacho generator
6 TH	1 st	Time domain analysis of control systems: Transient and steady state responses
	2 nd	Time domain specifications
	3 rd	First and second order systems
7 TH	1 st	Step responses of first and second order systems
	2 nd	Revision
	3 rd	III. Error analysis: Steady-state error analysis
8 TH	1 st	Static error coefficient of type 0, 1, 2 systems

	2 nd	Dynamic error coefficients.
	3 rd	Concept of stability:
9 TH	1 st	Time response for various pole locations
	2 nd	Stability of feedback system
	3 rd	Routh's stability criterion
10 TH	1 st	Routh's stability criterion
	2 nd	Revision
	3 rd	IV. Root locus and polar plot: General rules for constructing root loci
11 TH	1 st	Stability from root loci
	2 nd	Effect of addition of poles and zeros.
	3 rd	Lag, lead and lead-lag compensators
12 th	1 st	Nyquist Stability criterion
	2 nd	Nichols chart
	3 rd	Non-minimum phase system, Transportation lag
13 th	1 st	Revision
	2 nd	V. Frequency domain analysis: VI. Frequency domain specifications
	3 rd	Analysis based on bode plot
14 th	1 st	Analysis based on bode plot
	2 nd	Log magnitude vs. Phase plot,
	3 rd	State space model
15 th	1 st	State space model
	2 nd	State transition matrix
	3 rd	Revision



Chandramani Mahapatra
Lect. Stage-II (Electrical Engg.)



Head of the Department
Electrical Engg., GP Sonepur