LESSON PLAN

Subject :- TH:4(b) Linear Control Systems (**(Code) TH-4b EEPE202** **Name of faculty:-** Er Harekrushna Sahu

Semester :-4th **Class allotted 4p/w** **Branch :- Electrical Engineering**

Discipline	Semester:-4TH	From date:-23/12/25 To date:18/4/26	45P/45H
Subject:LCS	No. of days/ per week 4p/w:	Theory –Topics/Lesson	
DATE	**PERIOD**	**TOPIC COVERED**	**REMARKS**
23/12/25 to 15/1/26		**Unit No. I : 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 – block diagram representation – block diagram reduction – signal flow graph – Mason's gain formula – characteristic equation.	
16/1/26 to 07/02/26		**Unit No. II: Control system components:** DC and AC servo motors – synchro – gyroscope – stepper motor – Tacho generator. Time domain analysis of control systems: Transient and steady state responses – time domain specifications – first and second order systems step responses of first and second order systems.	

09/02/26 to27/02/26		**Unit No. III: Error analysis:** Steady-state error analysis – static error coefficient of type 0, 1, 2 systems – Dynamic error coefficients. Concept of stability: Time response for various pole locations – stability of feedback system – Routh's stability criterion	
28/02/26 to 21/03/26		**Unit No. IV: Root locus and Polar plot:** General rules for constructing Root loci – stability from root loci – effect of addition of poles and zeros. Lag, Lead and Lead- Lag compensators, Nyquist stability criterion- Nichols chart – Non-minimum phase system – transportation lag.	
23/03/26 to 18/4/26		**Unit No. V: Frequency domain analysis:** Frequency domain specifications- Analysis based on Bode plot – Log magnitude vs. phase plot, State space model, State Transition matrix	
Signature of HOD			**Signature of Faculty**