

Lesson Plan

Government Polytechnic Kendrapara
Department of Electronics and Tele-communication Engineering

	Discipline: ETC	Semester-6th Summer-2026	Name of the Teaching Faculty: Miss Devi pooja Mohapatra (Guest Faculty ETC Engg.)
Sl. No.	Subject-Th.2. (CONTROL SYSTEM & COMPONENT)	No. Of Days/Week class allotted:04	Semester From date:-22.12.2025 To date: 18.04.2026 (No of weeks: 15)
	Weeks/Months	Class Day	Topic
1	4th week 22dec to 31st dec	1st	Classification of Control system.
		2nd	Open loop system & Closed loop system and its comparison.
		3rd	Effects of Feedback.
		4th	Standard test Signals (Step, Ramp, Parabolic, and Impulse Functions).
2	1st week 2nd jan To 09th jan	1st	Servomechanism.
		2nd	Regulators (Regulating systems)
		3rd	Regulators (Regulating systems)
		4th	Transfer Function of a system.
3	2nd week 12th jan To 17th jan	1st	Impulse response of a system.
		2nd	Properties, Advantages& Disadvantages of Transfer Function.
		3rd	Poles & Zeroes of transfer Function.
		4th	Representation of poles & Zero on the s-plane.
4	3rd week 19th jan To 22th jan	1st	Simple problems of transfer function of network.
		2nd	Simple problems of transfer function of network.
		3rd	Components of Control System.
		4th	Potentiometer.
5	4th week 27th jan To 31th jan	1st	Synchros.
		2nd	Diode modulator & demodulator.
		3rd	DC motors.
		4th	AC Servomotors.
6	1st week 2nd feb To 07th feb	1st	Modelling of Electrical Systems(R, L, C, Analogous systems).
		2nd	Modelling of Electrical Systems(R, L, C, Analogous systems).
		3rd	Definition of Basic Elements of a Block Diagram.
		4th	Canonical Form of Closed loop Systems.
7	2nd week 9th feb To 13th feb	1st	Rules for Block diagram Reduction part-I
		2nd	Rules for Block diagram Reduction part-II
		3rd	Procedure for of Reduction of Block Diagram.
		4th	Simple Problem for equivalent transfer function.
8	3rd week 16th feb To 21th feb	1st	Basic Definition in SFG & properties.
		2nd	Mason's Gain formula.
		3rd	Steps for solving Signal flow Graph.
		4th	Simple problems in Signal flow graph for network.
9	4th week 23th feb To 27th feb	1st	Simple problems in Signal flow graph for network.
		2nd	Definition of Time, Stability, steady-state response, accuracy, transient accuracy, In-sensitivity and robustness.
		3rd	System Time Response.
		4th	Analysis of Steady State Error.
10	1st week 2nd march To 07th march	1st	Types of Input & Steady state Error (Step, Ramp, Parabolic).
		2nd	Parameters of first order system & second-order systems.
		3rd	Derivation of time response Specification (Delay time, Rise

		4th	time, Setting time, Peak over shoot).
	2nd week 9th march To 13th march	1st	Effect of parameter variation in Open loop System & Closed loop Systems.
		2nd	Effect of parameter variation in Open loop System & Closed loop Systems.
		3rd	Introduction to Basic control Action & Basic modes of
		4th	Effect of feedback on overall gain. Stability.
	3rd week 16th march To 20th march	1st	Realization of Controllers (P, PI, PD, PID) with OPAMP.
		2nd	Realization of Controllers (P, PI, PD, PID) with OPAMP.
		3rd	Effect of location of poles on stability.
		4th	Routh-Hurwitz stability criterion.
	4th week 23th march To 31th march	1st	Steps for Root locus method.
		2nd	Root locus method of design (Simple problem).
		3rd	Root locus method of design (Simple problem).
		4th	Frequency response, Relationship between time & frequency
	1st week 02th april To 10th april	1st	Methods of Frequency response.
		2nd	Polar plots & steps for polar plot.
		3rd	Bodes plot & steps for Bode plots.
		4th	Stability in frequency domain, Gain Margin & Phase margin.
	2nd week 13th april To 18th april	1st	Nyquist plots. Nyquist stability criterion.
		2nd	Simple problems as above.
		3rd	Concepts of state, state variable, state model.
		4th	State models for linear continuous time functions (Simple).

Devipuja Mohapatra
Signature of the teacher 22/12/25

22/12/25