



UTKAL INSTITUTE OF ENGINEERING & TECHNOLOGY

DISCIPLINE:	SEMESTER:			
Electronics & Telecommunication	6TH Sem	NAME OF THE TEACHING FACULTY: Er. BISIKESAN SAHOO		
SUBJECT:	No of Days/Per week class allotted: 4 Class P/W(60)	Semester From Date: 16/01/2024		
Th.2-CONTROL SYSTEMS & COMPONENT		To Date: 26/04/2024		
		No. Of Weeks: 15		
WEEK	CLASS DAY	THEORY TOPICS	REMARKS	
1 st	1 st	Fundamental of Control System: Classification of Control system	Date	Dean/Principal
	2 nd	Open loop system & Closed loop system and its comparison		
	3 rd	Effects of Feedback		
	4 th	Standard test Signals (Step, Ramp, Parabolic, Impulse Functions)		
2 nd	1 st	Servo mechanism, Regulators (Regulating systems)		
	2 nd	Transfer Function of a system		
	3 rd	Transfer Function of Impulse response,		
	4 th	Properties, Advantages of Transfer Function		
3 rd	1 st	Properties Disadvantages of Transfer Function		
	2 nd	Poles & Zeroes of transfer Function		
	3 rd	Poles & Zeroes of transfer Function		
	4 th	Representation of poles & Zero on the s-plane		
	1 st	Simple problems of transfer function of network		

4 th	2 nd	Control system Components & mathematical modelling of physical System : Components of Control System		
	3 rd	Potentiometer, Synchros, Diode modulator & demodulator ,		
	4 th	Potentiometer, Synchros, Diode modulator & demodulator ,		
5 th	1 st	DC motors, AC Servomotors		
	2 nd	Modelling of Electrical Systems (R, L, C, Analogous systems)		
	3 rd	Definition of Basic Elements of a Block Diagram		
	4 th	Canonical Form of Closed loop Systems		
6 th	1 st	Rules for Block diagram Reduction		
	2 nd	Procedure for Reduction of Block Diagram		
	3 rd	Simple Problem for equivalent transfer function		
	4 th	Basic Definition in SFG & properties		
7 th	1 st	Mason's Gain formula: Steps for solving Signal flow Graph		
	2 nd	Simple problems in Signal flow graph for network		
	3 rd	Definition of Time, Stability, steady-state response, accuracy		
	4 th	Definition of transient accuracy, In-sensitivity and robustness		
8 th	1 st	System Time Response		
	2 nd	Analysis of Steady State Error		
	3 rd	Types of Input & Steady state Error (Step, Ramp, Parabolic)		
	4 th	Parameters of first order system & second-order systems		

9th	1 st	Derivation of time response Specification(Delaytime,Rise time, Peak time,Setting time,Peakover shoot)		
	2 nd	Derivation of time response Specification(Delaytime,Rise time, Peak time,Setting time,Peakover shoot)		
	3 rd	Effect of parameter variation inOpenloopSystem&Closed loopSystems		
	4 th	IntroductiontoBasiccontrol Action& Basic modes of feedbackcontrol		
10th	1 st	proportional,integral and derivative		
	2 nd	Effectof feedbackon overall gain,Stability		
	3 rd	RealisationofControllers(P, PI,PD,PID)with OPAMP		
	4 th	RealisationofControllers(P, PI,PD,PID)with OPAMP		
11th	1 st	Stabilityconcept&Rootlocus Method:Effectoflocationof poleson stability		
	2 nd	RouthHurwitzstability criterion		
	3 rd	StepsforRootlocus method		
	4 th	StepsforRootlocus method		
12th	1 st	Rootlocusmethodof design(Simpleproblem)		
	2 nd	Rootlocusmethodof design(Simpleproblem)		
	3 rd	Rootlocusmethodof design(Simpleproblem)		
	4 th	ASSIGNMENT		
13th	1 st	Frequencyresponse,Relationsh ip between time & frequency response		
	2 nd	MethodsofFrequency response		
	3 rd	Polarplots& stepsforpolar plot		
	4 th	Bodesplot&stepsforBode plots		

14th	1 st	Stability in frequency domain, Gain Margin & Phase margin		
	2 nd	Nyquist plots. Nyquist stability criterion		
	3 rd	Simple problems as above		
	4 th	State variable Analysis 9.1 Concepts of state, state variable, state model,		
15th	1 st	State variable Analysis 9.1 Concepts of state, state variable, state model,		
	2 nd	state models for linear continuous time functions (Simple)		
	3 rd	state models for linear continuous time functions (Simple)		
	4 th	DOUBT CLEAR CLASS		

Jyotiprakash Swain

HOD

Chittaranjan Parida

DEAN

(Signature)

PRINCIPAL