GANDHI SCHOOL OF ENGINEERING

BHABANDHA,BERHAMPUR

PROPOSED WORK

6th SEM ETC SUBJECT- Th.2 CONTROL SYSTEMS & COMPONENT

Name of Faculty- ER. SATYABRATA TRIPATHY

SL NO. CHAPTER	TOPICS	NO OF PERIODS ASSIGNED BY SCTE&VT	PLANNING DATES	REMARKS
1	**Fundamental of Control System** 1.1 Classification of Control system 1.2 Open loop system & Closed loop system and its comparison 1.3 Effects of Feed back 1.4 Standard test Signals(Step, Ramp, Parabolic, Impulse Functions) 1.5 Servomechanism 1.6 Regulators (Regulating systems)	05	10/3/2022 To 17/03/2022	
2	**Transfer Functions** 2.1 Transfer Function of a system & Impulse response, 2.2 Properties,Advantages& Disadvantages of Transfer Function 2.3 Poles & Zeroes of transfer Function 2.4 Representation of poles & Zero on the s-plane 2.5 Simple problems of transfer function of network	08	21/03/2022 To 30/03/2022	

3	**Control system Components & mathematical modelling of physical System** 3.1 Components of Control System 3.2 Potentiometer, Synchros, Diode modulator & demodulator , 3.3 DC motors, AC Servomotors 3.4 Modelling of Electrical Systems(R, L, C, Analogous systems)	**05**	**31/03/2022 To 08/04/2022**	
4	**Block Diagram & Signal Flow Graphs(SFG)** 4.1 Definition of Basic Elements of a Block Diagram 4.2 Canonical Form of Closed loop Systems 4.3 Rules for Block diagram Reduction 4.4 Procedure for of Reduction of Block Diagram 4.5 Simple Problem for equivalent transfer function 4.6 Basic Definition in SFG & properties 4.7 Mason's Gain formula 4.8 Steps foe solving Signal flow Graph 4.9 Simple problems in Signal flow graph for network	**08**	**11/04/2022 To 22/04/2022**	
5	**Time Domain Analysis of Control Systems** 5.1 Definition of Time, Stability, steady-state response, accuracy, transient accuracy, In-sensitivity and robustness. 5.2 System Time Response 5.3 Analysis of Steady State Error 5.4 Types of Input & Steady state Error(Step ,Ramp, Parabolic) 5.5 Parameters of first order system & second-order systems 5.6 Derivation of time response Specification (Delay time, Rise time, Peak time,Setting time,Peak over shoot)	**08**	**25/04/2022 To 05/05/2022**	

6	**FeedbackCharacteristics of Control Systems** 6.1 Effect of parameter variation in Open loop System & Closed loop Systems 6.2 Introduction to Basic control Action& Basic modes of feedback control: proportional, integral and derivative 6.3 Effect of feedback on overall gain, Stability 6.4 Realisation of Controllers(P, PI,PD,PID) with OPAMP	**06**	**06/05/2022 To 17/05/2022**	
7	**Stability concept& Root locus Method** 7.1 Effect of location of poles on stability 7.2 RouthHurwitz stability criterion. 7.3 Steps for Root locus method 7.4 Root locus method of design(Simple problem)	**08**	**18/05/2022 To 30/05/2022**	
8	**Frequency-response analysis&Bode Plot** 8.1 Frequencyresponse,Relationship between time & frequency response 8.2 Methods of Frequency response 8.3 Polar plots & steps for polar plot 8.4 Bodes plot & steps for Bode plots 8.5 Stability in frequency domain, Gain Margin& Phase margin 8.6 Nyquist plots. Nyquiststability criterion. 8.7 Simple problems as above	**07**	**31/05/2022 To 08/06/2022**	
9	**State variable Analysis** 9.1 Concepts of state, state variable, state model, 9.2 state modelsfor linear continuous time functions(Simple)	**05**	**09/06//2022 To 17/06/2022**	

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