



Department of Electrical and Electronics Engineering

Lesson Plan –BEE602-Control Systems, AY: 2024-25, Even Semester

Course with Code: BEE602-Control Systems				Faculty: Dr.Praveen Kumar M			Semester & Section: VI	
Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Class No.	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks if any deviation
MODULE-1								
1		Introduction, Classification of control systems	Chalk & Talk					
2		Open loop, closed loop, comparisons, Components of Closed loop systems	Chalk & Talk					
3		Advantages of Transfer function (T.F) of SISO, Characteristic Equation, Poles & Zeros of T.F, Disadvantages of T.F	Chalk & Talk					
4		Basic of Modelling of translational mechanical system to derive transfer functions	ICT+ Chalk & Talk					
5		Modelling of translational mechanical system to derive transfer functions	Chalk & Talk					
6		Modelling of Rotational mechanical system to derive transfer functions	Chalk & Talk					
7		Modelling of electrical system Force-Voltage analogy & Force-current analogy to obtain equivalent electrical system	ICT+ Chalk & Talk					
8		Modelling of electrical system Force-Voltage analogy & Force-current analogy to obtain equivalent electrical system	ICT+ Chalk & Talk					
9		Transfer function of servomotors,	Chalk & Talk					
10		Transfer functions of synchro's, gear trains	ICT+ Chalk & Talk					



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MODULE-2								
11		Procedure for drawing block diagram and block diagram reduction to find transfer function.	ICT+ Chalk & Talk					
12		Numerical on block diagram reduction to find transfer function.	Chalk & Talk					
13		Numerical on block diagram reduction to find transfer function.	Chalk & Talk					
14		Numerical on block diagram reduction to find transfer function.	Chalk & Talk					
15		Numerical on block diagram reduction to find transfer function.	Chalk & Talk					
16		Construction of signal flow graphs, basic properties of signal flow graph	Chalk & Talk					
17		Numerical on signal flow graphs Obtaining the transfer function of a system by using Mason's gain formula.	ICT+ Chalk & Talk					
18		Numerical on signal flow graphs Obtaining the transfer function of a system by using Mason's gain formula.	Chalk & Talk					
19		Numerical on signal flow graphs Obtaining the transfer function of a system by using Mason's gain formula.	Chalk & Talk					
20		Numerical on signal flow graphs Obtaining the transfer function of a system by using Mason's gain formula.	ICT					



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MODULE-3								
21		Time domain analysis: Introduction to standard test signals	ICT+ Chalk & Talk					
22		Time domain analysis: Time response of first order system.	ICT+ Chalk & Talk					
23		Time response of second order system and time specifications of the response	Chalk & Talk					
24		Numerical on Time domain specification	Chalk & Talk					
25		Steady state errors and error constants	Chalk & Talk					
26		Numerical on Steady state errors and error constants	ICT+ Chalk & Talk					
27		Routh Stability criterion: Necessary conditions for stability of a system, difficulties in formulation of Routh table	Chalk & Talk					
28		Solving the numerical on RH criterion.	ICT+ Chalk & Talk					
29		Solving the numerical on RH criterion.	Chalk & Talk					
30		Solving the numerical on RH criterion.	ICT+ Chalk & Talk					



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MODULE-4								
31		Introduction, Rules for the construction of root locus	ICT+ Chalk & Talk					
32		Solving numerical on root locus	Chalk & Talk					
33		Solving numerical on root locus	Chalk & Talk					
34		Introduction to frequency response analysis	Chalk & Talk					
35		Introduction to frequency response analysis	Chalk & Talk					
36		Bode plots: Basic factors $G(i\omega)/H(j\omega)$,	ICT+ Chalk & Talk					
37		General procedure for constructing bode plots, computation of gain margin and phase margin.	ICT+ Chalk & Talk					
38		Solving numerical on Bode plots	Chalk & Talk					
39		Solving numerical on Bode plots	Chalk & Talk					
40		VTU QP & SRS Conduction	ICT					



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MODULE-5								
41		Compensators and Controllers Introduction, Phase-Lead Compensator, Phase- Lag Compensator	ICT+ Chalk & Talk					
42		Lead-Lag Compensator	Chalk & Talk					
43		Proportional controller, Derivative controller,	Chalk & Talk					
44		Integral controller,	ICT+ Chalk & Talk					
45		PD Controller, PI Controller, PID Controller	Chalk & Talk					
46		State space model- Concepts of State, State variable and State model	Chalk & Talk					
47		State Model for linear continuous time systems, Transfer Function from State Space Model	Chalk & Talk					
48		State Transition Matrix and its Properties	Chalk & Talk					
49		Solution of state equation	Chalk & Talk					
50		Solution of state equation	ICT					



A T M E

College of Engineering



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	Activity	Planned	Actual	Remarks
1	Theory Classes	50		
2	Assignments/ Quizzes/ Self-study	3		
3	Tutorials/ Extra classes	-		
4	Internal Assessments	3		
5	ICT based Teaching (% of usage in Curriculum)	30%		
Planning			Execution	
Faculty Signature:			Faculty Signature:	
HoD Signature:			HoD Signature:	