Academic lesson plan for summer semester-2025

Name of the teaching faculty: DEBADATTA NAYAK

Discipline/ Dept.: **EE**

Semester:**6ᵗʰ**

Subject(Theory): **CSE**

No. of periods per week: **5**

Total Periods**: 75**

Semester Exam: **80**

Class Test: **20**

Total Marks:**100**

Week	Period	UNIT/CHAPTER	Topic to be covered
1ST	1st	FUNDAMENTAL OFCONTROL	Introduction to CS. Classification of Control system
	2nd	FUNDAMENTAL OF CONTROL	Open loop & Closed loop system and its comparison
	3rd	FUNDAMENTAL OF CONTROL	Effects of Feedback
2ND	1st	FUNDAMENTAL OF CONTROL	Standard test Signals. Servo mechanism
	2nd	TUTORIAL CUM DOUBT CLEAR	Discussion about different test signals.
	3rd	MATHEMATICAL MODEL OF A SYSTEM	Transfer Function & Impulse response
	4th	MATHEMATICAL MODEL OF A SYSTEM	Properties, Advantages & Disadvantages of T.F
	5th	MATHEMATICAL MODEL OF A SYSTEM	Poles & Zeroes of T.F. Problems of TF of network.
3RD	1st	MATHEMATICAL MODEL OF A SYSTEM	Mathematical modeling of Electrical Systems.
	2nd	TUTORIAL CUM DOUBT CLEAR	Discussion of formulas of Laplace Transform.
	3rd	CONTROL SYSTEM COMPONENTS	Components of Control System
	4th	CONTROLSYSTEM COMPONENTS	Gyroscope, Synchros,
	5th	CONTROLSYSTEM COMPONENTS	Tachometer, DC servomotors
4TH	1st	CONTROLSYSTEM COMPONENTS	Ac Servomotors
	2nd	TUTORIAL CUM DOUBT CLEAR	Simple Problem Discussion on Laplace Transform
	3rd	BLOCK DIAGRAM ALGEBRA	Basic Elements of Block Diagram
	4th	BLOCK DIAGRAM ALGEBRA	Canonical Form of Closed loop Systems
	5th	BLOCK DIAGRAM ALGEBRA	Rules for Block diagram reduction
5TH	1st	BLOCK DIAGRAM ALGEBRA	Procedure for Reduction of Block Diagram
	2nd	TUTORIAL CUM DOUBT CLEAR	Examples problems of Block Diagram reduction
	3rd	BLOCK DIAGRAM ALGEBRA	Problem for equivalent transfer function
	4th	SIGNA LFLOW GRAPHS	Signal Flow Graph & properties
	5th	SIGNA LFLOW GRAPHS	Construction of SFG from Block diagram
6TH	1st	SIGNA LFLOW GRAPHS	Mason's Gain formula. Problems on Signal flow graph
	2nd	TUTORIAL CUM DOUBT CLEAR	Examples problems of Signal Flow Graph
	3rd	TIME RESPONSE ANALYSIS	Time response of control system
	4th	TIME RESPONSE ANALYSIS	Standard Test signal
	5th	TIME RESPONSE ANALYSIS	Time Response of 1ˢᵗ order system with Unit stepres.
7TH	1st	TIME RESPONSE ANALYSIS	Time Response o f1ˢᵗ order system with Unit impulseres
	2nd	TUTORIAL CUM DOUBT CLEAR	Simple Problem Discussion on TIME RESPONSE ANALYSIS
	3rd	TIME RESPONSE ANALYSIS	Timeresponseof2ⁿᵈordersystemtotheunitstepinput
	4th	TIME RESPONSE ANALYSIS	Timeresponseof2ⁿᵈordersystemtotheunitstepinput
	5th	TIME RESPONSE ANALYSIS	Types of errors in control system
8TH	1st	TIME RESPONSE ANALYSIS	Types of errors in control system
	2nd	TUTORIAL CUM DOUBT CLEAR	Simple Problem Discussion on TIME RESPONSE ANALYSIS.
	3rd	TIME RESPONSE ANALYSIS	Effect of adding poles and zero to transfer function
	4th	TIME RESPONSE ANALYSIS	Response with P, PI, PD and PID controller
	5th	ROOT LOCUS TECHNIQUE	Root locus concept
9TH	1st	ROOT LOCUS TECHNIQUE	Routh Hurwitz criterion
	2nd	TUTORIAL CUM DOUBT CLEAR	Examples problems of Routh Hurwitz criterion
	3rd	ROOT LOCUS TECHNIQUE	Construction of root loci
	4th	ROOT LOCUS TECHNIQUE	Rules for construction of the root locus with example
	5th	ROOT LOCUS TECHNIQUE	Rules for construction of the root locus with example
10TH	1st	ROOT LOCUS TECHNIQUE	Effect of adding poles and zeros to G(s) and H(s)
	2nd	TUTORIAL CUM DOUBT CLEAR	Objective questions on basics of Control System
	3rd	ROOT LOCUS TECHNIQUE	Examples problems of Root locus Diagram
	4th	ROOT LOCUS TECHNIQUE	Examples problems of Root locus Diagram
	5th	ROOT LOCUS TECHNIQUE	Examples problems of Root locus Diagram

	1st	ROOT LOCUS TECHNIQUE	Examples problems of Root locus Diagram
11TH	2nd	TUTORIAL CUM DOUBT CLEAR	Objective questions on basics of Control System
	3rd	FREQUENCY RESPONSE OF SYSTEM	Correlation between time & frequency response
	4th	FREQUENCY RESPONSE OF SYSTEM	Polar plots
	5th	FREQUENCY RESPONSE OF SYSTEM	Bode plots.
12TH	1st	FREQUENCY RESPONSE OF SYSTEM	All pass and minimum phase system
	2nd	TUTORIAL CUM DOUBT CLEAR	Objective questions on basics of Control System
	3rd	FREQUENCY RESPONSE OF SYSTEM	Computation of Gain margin and phase margin
	4th	FREQUENCY RESPONSE OF SYSTEM	Log magnitude versus phase plot.
	5th	FREQUENCY RESPONSE OF SYSTEM	Closed loop frequency response
13th	1st	FREQUENCY RESPONSE OF SYSTEM	Examples problems of Bode Plot
	2nd	TUTORIAL CUM DOUBT CLEAR	Objective questions on basics of Control System
	3rd	FREQUENCY RESPONSE OF SYSTEM	Examples problems of Bode Plot
	4th	FREQUENCY RESPONSE OF SYSTEM	Examples problems of Bode Plot
	5th	NYQUIST PLOT	Principle of argument
14th	1st	NYQUIST PLOT	Niquist stability criterion
	2nd	TUTORIAL CUM DOUBT CLEAR	Objective questions on basics of Control System
	3rd	NYQUIST PLOT	Niquist stability criterion applied to inverse polar plot
	4th	NYQUIST PLOT	Addition of poles and zeros to G(S)H(S)
	5th	NYQUIST PLOT	Effect on the shape of NYQUIST PLOT by pole zero addition
15th	1st	NYQUIST PLOT	Assessment of relative stability
	2nd	TUTORIAL CUM DOUBT CLEAR	Doubts of Control System.
	3rd	NYQUIST PLOT	Constant M and N circle
	4th	NYQUIST PLOT	Nicholas chart.
	5th	NYQUIST PLOT	Examples problems of NYQUIST PLOT
16th.	1st	NYQUIST PLOT	Examples problems of NYQUIST PLOT
	2nd	TUTORIAL CUM DOUBT CLEAR	Doubts of Control System.

The lesson plan prepared by the concerned faculty.

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LECTURER,
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