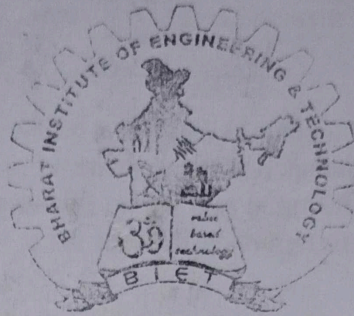


BHARAT INSTITUTE OF ENGINEERING & TECHNOLOGY

SIVARAM VIHAR, GHATAKESWAR HILLS
MOHADA, BERNAMPUR (GM.)



STUDENT'S ATTENDANCE REGISTER

Time Day	12.25 01.15	10.45 11.35	11.35 12.25	12.25 01.15	09.05 09.55
TUE	CSE				
WED		CSE			
THU			CSE		
THU				CSE	
FRI					CSE

Year/ Session :

2022-23 (Summer)

Semester & Branch

6th Sem, Electrical Engg.

Subject with Code

Control System Engineering

Name of the Faculty Member

Er. K. Srinivas

B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
February 2023	3rd		Ch: 1 <u>Fundamental of Control System:</u>
		14/02/23	1.1: Classification of control system. 1.2: Open loop system & closed loop system and its comparison.
		15/02/23	1.3: Effects of feedback. 1.4: Standard test signals. → Step functions → Ramp functions → Parabolic functions → Impulse functions.
		16/02/23	1.5: Servomechanism.

16/2/23

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B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
February 2023	3 rd		Ch:2: <u>Mathematical Model of a system</u>
		17/02/23	2.1: Transfer function & impulse response. 2.2: Properties, Advantages & Disadvantages of Transfer function.
	4 th	21/02/23	2.3: Poles & Zeros of transfer function. 2.4: Sample problems of transfer function of network.
		22/02/23	2.5: Mathematical modeling of Electrical system. (R, L, C, Analogous systems)
		23/02/23	Tutorial Class

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Signature

B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
February 2023	24/02/23		Ch:3:
	4th	24/02/23	<u>Control System Components:</u>
	5th	28/02/23	3.1: Components of Control system,
			3.2: Gyroscope
			Synchros
March 2023		01/03/23	Tachometer
		02/03/23	DC Servomotor
	1st		AC Servomotor.
		02/03/23	Tutorial Class

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B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
March 2023	1 st		<u>Ch: 4:</u> <u>Block Diagram Algebra & Signal flow graph:</u>
		03/03/23	4.1: Definition of Basic elements of BD. 4.2: Canonical form of closed loop systems.
	2 nd	09/03/23	4.3: Rules for block diagram reduction. 4.4: Procedure for reduction of Block diagram.
		09/03/23	4.5: Simple problem for equivalent transfer function.
		10/03/23	4.6: Basic Definition of Signal flow graph & Properties.

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B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
March 2023	3 rd	14/03/23	<u>4.7</u> : Construction of signal flow graph & it's properties.
		15/03/23	<u>4.8</u> : Mason's gain formula.
		16/03/23	<u>4.9</u> : Simple problems on signal flow graph for network.
		16/03/23	
		17/03/23	Tutorial
	4 th		<u>Ch:5</u> : <u>Time Response Analysis</u>
		21/03/23	<u>5.1</u> : Time response of control system
			<u>5.2</u> : Standard test signal.
		22/03/23	→ Step signal → Ramp signal → Parabolic signal → Impulse signal.
		23/03/23	<u>5.3</u> : Time Response of First Order system with:
		23/03/23	→ Unit step Response → Unit impulse Response

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B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
March 2023	4 th	24/03/23	<u>5.4</u> : Time response of 2 nd Order system to the unit step input. ↳ Time response specification. ↳ Derivation of expression for rise time, peak time, peak-overshoot, settling time & steady state error.
	5 th	28/03/23	↳ Steady state error & error constants.
		29/03/23	<u>5.5</u> : Types of control system. ↳ Steady state error in
		31/03/23	Type-0, Type-1, Type-C system.
April 2023	2 nd	04/04/23	<u>5.6</u> : Effect of adding poles and Zero to transfer function.
		05/04/23	<u>5.7</u> : Response with P, PI & PD & PID Controller.
		06/04/23	Tutorial Class

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B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
April 2023	2nd	06/04/23	CH:6: <u>Analysis of Stability By root locus</u> <u>Technique.</u>
			G.1: Root locus Concept.
	3rd	11/04/23	G.2: Construction of root loci.
		12/04/23	
		13/04/23	G.3: Rules for Construction of the root loci.
		13/04/23	
	4th	18/04/23	G.4: Effect of adding poles & zeros to G(s) and H(s).
		19/04/23	
		20/04/23	Tutorial Class
		20/04/23	

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16/2/23

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B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
April 2023	4 th	21/04/23	<u>Ch: 7:</u> <u>Frequency Response Analysis:</u> <u>7.1:</u> Correlation between time response and frequency response
		25/04/23 26/04/23	<u>7.2:</u> Polar plots.
	5 th	27/04/23	<u>7.3:</u> Bode plots:
		27/04/23	<u>7.4:</u> All pass and minimum phase system.
		28/04/23	<u>7.5:</u> Computation of gain margin & phase margin.
May 2023	1 st	02/05/23	
		03/05/23 04/05/23	<u>7.6:</u> Log magnitude versus phase plot.
		04/05/23	<u>7.7:</u> Closed loop frequency Response.
		09/05/23	

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B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
May 2023	2nd		<u>Ch: 8:</u>
			<u>Nyquist Plot:</u>
		09/05/23	<u>8.1:</u> Principle of argument.
		10/05/23	<u>8.2:</u> Nyquist Stability Criterion.
		11/05/23	<u>8.3:</u> Nyquist Stability Criterion applied to converse polar plot.
	3rd	11/05/23	<u>8.4:</u> Effect of addition of poles & zeros to $G(s)H(s)$ on the shape of Nyquist plot.
		12/05/23	
		16/05/23	<u>8.5:</u> Assessment of relative stability.
	4th	17/05/23	<u>8.6:</u> Constant M and N circle.
		18/05/23	<u>8.7:</u> Nichols Chart.
	4th	23/05/23	Tutorial Class

Sun
14/2/23

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