

GOPAL KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY JEYPORE

GOURAHARI VIHAR, PO: RANIPUT, JEYPORE – 764005

LESSON PLAN

Discipline: ELECTRICAL ENGINEERING

Semester: 5TH

Name of the Teaching Faculty: JYOTIRANI CHOUDHARY

Subject: CONTROL SYSTEM (EOPC2007)

No. of days/per week class allotted: 03

Semester From: July To: December

No. of Weeks: 15

Week	Class Day	Theory / Practical Topics
1ST	1ST	Introduction to Control Systems, Open Loop and Closed Loop Systems
	2ND	Examples of Control Systems and Principle of Feedback
	3RD	Mathematical Modelling of Electrical Systems (RLC Circuits)
2ND	1ST	Mathematical Modelling of Mechanical Systems
	2ND	Force-Voltage and Force-Current Analogies
	3RD	Introduction to Laplace Transform and Important Formulae
3RD	1ST	Transfer Functions of Open Loop and Closed Loop Systems
	2ND	Block Diagram Algebra and Reduction Techniques
	3RD	Signal Flow Graph and Mason's Gain Formula
4TH	1ST	Introduction to LTI Systems and Standard Test Signals
	2ND	Time Response of First Order Systems
	3RD	Time Response of Second Order Systems
5TH	1ST	Time Response Specifications
	2ND	Steady State Error and Error Constants
	3RD	Effect of Adding Zeroes to a System
6TH	1ST	Performance Indices – ISE, ITSE, IAE and ITAE
	2ND	Numerical Problems on Time Response Analysis
	3RD	Revision of Module I and II
7TH	1ST	Routh Hurwitz Stability Criterion
	2ND	Numerical Problems on Routh Stability
	3RD	Introduction to Root Locus Technique
8TH	1ST	Construction Rules of Root Locus

	2ND	Stability Analysis using Root Locus
	3RD	Numerical Problems on Root Locus
9TH	1ST	Frequency Response and Bode Plot
	2ND	Stability Analysis using Bode Plot
	3RD	Nyquist Stability Criterion
10TH	1ST	Numerical Problems on Frequency Domain Analysis
	2ND	Revision of Frequency Domain Stability Methods
	3RD	Tutorial and Previous Year Questions
11TH	1ST	P, PI and PID Controller Design
	2ND	Lag, Lead and Lead-Lag Compensators
	3RD	Controller Design Problems
12TH	1ST	Introduction to State Space Analysis
	2ND	State Space Representation of Transfer Function Systems
	3RD	Solving Time Invariant State Space Models
13TH	1ST	Controllability of Control Systems
	2ND	Observability of Control Systems
	3RD	Numerical Problems on State Space Analysis
14TH	1ST	Mock Test and Assignment Discussion
	2ND	Previous Year Question Discussion
	3RD	Doubt Clearing and Viva Preparation
15TH	1ST	Revision of Important Concepts
	2ND	Final Class Test
	3RD	Course Closure and Feedback Session