



Orissa School of Mining Engineering Keonjhar

Department of Electrical Engineering Lesson Plan (

VISION OF OUR DEPARTMENT:

provide excellent knowledge and enrich the problem solving skills of the students in the field of Electrical Engineering with a focus to prepare the students for industry need, recognized as innovative leader, responsible citizen and improve the environment.

MISSION OF OUR DEPARTMENT:

1. Prepare the students with strong fundamental concepts, analytical capability, and problem solving skills. Create an ambience of education through faculty training, self-learning, sound academic practices and research endeavors.
2. Provide opportunities to promote organizational and leadership skills in students through various extra- curricular and co-curricular events.
3. To make the students as far as possible industry ready to enhance their employability in the industries.
4. To improve department industry collaboration and to maintain effective operational environment.

Program Educational Objectives

The Program Educational Objectives (PEOs) of the Electrical Engineering Department are given below:

1. PEO1- To engage in Design of Systems, tools and applications in the field of electrical Engineering and allied engineering Industries.
2. PEO2- To apply the knowledge of electrical engineering to solve problems of social relevance and/or pursue higher education
3. PEO3- To work effectively as individuals and as team members in multidisciplinary projects by exhibit leadership capability, triggering social and economic commitment and inculcate community services and protect environment
4. PEO4- Engage in lifelong learning, career enhancement and adapt to changing professional and societal needs.



DEPARTMENT OF ELECTRICAL ENGINEERING
ORISSA SCHOOL OF MINING ENGINEERING KEONJHAR
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LESSON PLAN

Discipline- Electrical Engineering	Semester- 6th	Name of the Teaching Faculty- ER SHRADHA PATRA			
Subject- CONTROL SYSTEM ENGINEERING Subject Code- TH3	No. of days/week class allotted-5	Semester From Date: 14/02/2023 To Date: 23/05/2023 Number of weeks- 15			
MONTH	WEEK	NO. OF PERIODS AVAILABLE	CLASS DAY	THEORY TOPICS TO BE COVERED	
FEBRUARY	1st	2	15/02/2023	Classification of Control system	
			16/02/2023	Open loop system & Closed loop system and its comparison	
	2nd	5	20/02/2023	Effects of Feed back	
			22/02/2023	Standard test Signals(Step, Ramp, Parabolic, Impulse Functions)	
			23/02/2023	Servomechanism	
			25/02/2023	Transfer Function & Impulse response,	
			25/02/2023	Properties, Advantages & Disadvantages of Transfer Function	
			27/02/2023	Poles & Zeroes of transfer Function	
	MARCH	3rd	5	01/03/2023	Simple problems of transfer function of network.
				02/03/2023	Simple problems of transfer function of network.
04/03/2023				Mathematical modeling of Electrical Systems(R, L, C, Analogous systems)	
04/03/2023				Problems based on Electrical analogous systems	
06/03/2023				Problems based on Electrical analogous systems	
4th		4	09/03/2023	Components of Control System	
			11/03/2023	Gyroscope & Synchros	
			11/03/2023	Tachometer & DC servomotors	
			13/03/2023	AC Servomotors	
5th		5	15/03/2023	CLASS TEST 1	
	16/03/2023		Definition: Basic Elements of Block Diagram		
	18/03/2023		Rules for Block diagram reduction		

	6th	5	18/03/2023	Procedure for of Reduction of Block Diagram
			20/03/2023	Simple Problem for equivalent transfer function
			22/03/2023	Problems on BDR
			23/03/2023	Basic Definition in Signal Flow Graph & properties
			25/03/2023	Construction of Signal Flow graph from Block diagram
			25/03/2023	Mason's Gain formula
	7th	2	27/03/2023	Simple problems in Signal flow graph for network
			29/03/2023	Simple problems in Signal flow graph for network
APRIL	8th	5	03/04/2023	Time response of control system Standard test signals- Step, Ramp, Parabolic, Impulse
			05/04/2023	Time Response of first order system with: Unit step response & Unit impulse response.
			06/04/2023	Time response of second order system to the unit step input.
			08/04/2023	Time response specification. Derivation of expression for rise time, peak time,
			08/04/2023	Peak overshoot and settling time
	9th	5	10/04/2023	Steady state error and error constants
			12/04/2023	Steady state errors in Type-0, Type-1, Type-2 system
			13/04/2023	Effect of adding poles and zeroes to transfer function
			15/04/2023	Response with P, PI, PD & PID Controllers
			15/04/2023	Root locus concept
	10th	5	17/04/2023	Construction of root loci
			19/04/2023	Rules for construction of the root locus
			20/04/2023	INTERNAL ASSESSMENT
			22/04/2023	Effect of adding poles and zeros to $G(s)$ and $H(s)$
			22/04/2023	Correlation between time response and frequency response
	11th	5	24/04/2023	Polar plots- introduction & rules

			26/04/2023	Polar plots- Problems
			27/04/2023	Bode plots- introduction and rules
			29/04/2023	Bode plots- problems
			29/04/2023	All pass & minimum phase system
MAY	12th	5	01/05/2023	Computation of GM & PM
			03/05/2023	Log magnitude vs phase plot
			04/05/2023	Principle of argument
			06/05/2023	Nyquist stability criterion
			06/05/2023	Nyquist stability criterion applied to inverse polar plot.
	13th	5	08/05/2023	Effect of addition of poles and zeros to $G(S)$ $H(S)$ on the shape of Nyquist plot
			10/05/2023	Assessment of relative stability
			11/05/2023	Constant M and N circle
			13/05/2023	Nicholas chart.
			13/05/2023	Revision
	14th	5	15/05/2023	Doubt clearing
			17/05/2023	Probable question practise
			18/05/2023	Revision of Chapter 1, 2 & 3
			20/05/2023	Revision of Chapter 4, 5 & 6
			20/05/2023	Revision of Chapter 7 & 8
	15th	1	22/05/2023	VST

Total → 64 out of 75
class

Shradha
10/02/2023
SHRADHA PATRA
PTGF ELECTRICAL
DEPARTMENT
OSME KEONJHAR

S.M.
10/2/2023
HOD
ELECTRICAL DEPT
OSME KEONJHAR

Principals
10/2/23
PRINCIPAL
OSME KEONJHAR