Orissa School of Mining EngineeringKeonjhar

Department of Electrical Engineering

Lesson Plan

The Vision of the Electrical Engineering Department:

To 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.

The Mission of Electrical Engineering 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. PE02- To apply the knowledge of electrical engineering to solve problems of social relevance and/or pursue higher education

3. PE03- 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.

numbers for a binary number

Program Specific Outcome (PSOs)Program Outcome(POs):

Basic and Discipline specific knowledge: Apply knowledge of basic mathematics, science and engineering fundamentals and engineering specialization to solve the engineering problems.

1. Problem Analysis: Identify and analyze well defined engineering problems using codified standard methods.

2. Design/development of solutions: Design solutions for well-defined technical problems and assist with the design of system components or processes to meet specified needs.

3. Engineering Tools,Experimentation and Testing : Apply modern engineering tools and appropriate technique to conduct standard tests and measurements .

4. Engineering Practices for Society ,Sustainability and Environment : Apply appropriate technology in context of society ,sustainability ,environment and ethical practices.

5. Project Management: Use engineering management principles individually ,as a team member or a leader to manage projects and effectively communicate about well-defined engineering activities .

6. Life-long Learning : Ability to analyze individual needs and engage in updating in the context of technological changes.

Program Specific Outcome(PSOs)

PSO1:Apply engineering and laboratory skills for testing operation and maintenance of electrical machine ,power and energy system

PSO2:Model and analyze ,realize physical systems ,components or processes related to electrical engineering system

PSO3:work professionally in power system engineering ,electrical machine and circuit system

Subject : Pr2. CIRCUIT AND SIMULATION LAB

Discipline: **Electrical Engineering**		Name of the Faculty: **Er. Sitanjali Mardi**	
Course Code:	TH-2	Semester:	3rd
Total Periods:	90	Examination:	3hrs winter 2023-24
Theory Periods:	6P/W	Sessional:	50
Maximum Marks:	100	End Semester Examination:	50

Week	NO OF PERIODS AVAILABLE	Class Day	Theory Topics to be covered	Remarks
1st	2	1st 3.8.23	INTRODUCTION/ BRIEFING	
		2nd 7.8.23	1. Measurement of equivalent resistance in series and parallel circuit	
2nd	2	1st 10.8.23	1. Measurement of equivalent resistance in series and parallel circuit	
		2nd 14.8.23	2. Measurement of power and power factor using series R-L-C Load.	
3rd		1st 17.8.23	2. Measurement of power and power factor using series R-L-C Load.	
	2	2nd 21.8.23	3. Verification of KCL and KVL.	
4TH	2	1st 24.8.23	3. Verification of KCL and KVL.	
		2nd, 28.8.23	4. Verification of Super position theorem	
5th	2	1st 31.8.23	4. Verification of Super position theorem	

		2nd, 4.9.23	5. Verification of Thevenin's Theorem	
	2	1st 7.9.23	5. Verification of Thevenin's Theorem	
		2nd 11.9.23	6. Verification of Norton's Theorem	
7th	2	1st, 14.9.23	6. Verification of Norton's Theorem	
		2nd 18.9.23	7. Verification of Maximum power transfer Theorem	
8th		1st 21.9.23	7. Verification of Maximum power transfer Theorem	
	2	2nd 25.9.23	8. Determine resonant frequency of series R-L-C circuit	
9th		1st 28.9.23	8. Determine resonant frequency of series R-L-C circuit	
	2	2nd 5.10.23	9. Study of Low pass filter & determination of cut-off frequency	
10th	2	1st, 9.10.23	9. Study of Low pass filter & determination of cut-off frequency	
		2nd 12.10.23	10. Study of High pass filter & determination of cut-off frequency	
11th	2	1st, 16.10.23	10. Study of High pass filter & determination of cut-off frequency	
		2nd 19.10.23	11. Analyze the charging and discharging of an R-C & R-L circuit with oscilloscope and Compute the time constant from the tabulated data and determine the rise time graphically	
12th	2	1st 30.10.23	11. Analyze the charging and discharging of an R-C & R-L circuit with oscilloscope and Compute the time constant from the tabulated data and determine the rise time graphically	
		2nd 2.11.23	11. Analyze the charging and discharging of an R-C & R-L circuit with oscilloscope and Compute the time constant from the tabulated data and determine	

			2the rise time graphically	
13th		1st 6.11.23	12. Construct the Superposition theorem CIRCUIT using P-Spice/MATLAB software and compare the measurements and waveforms	
		2nd 9.11.23	12. Construct the Series Resonant Circuit circuits using P-Spice/MATLAB software and compare the measurements and waveforms	
14th	2	1st 13.11.23	12. Construct the Series Resonant Circuit circuits using P-Spice/MATLAB software and compare the measurements and waveforms	
		2nd 16.11.23	2. Construct theTransient Response in R-L-C series circuit Circuit using P-Spice/MATLAB software and compare the measurements and waveforms	
15th	2	1st 2011.23	practice	
		2nd 23.11.23	practice	
16th	1	1st 30.11.23	sessional	
	Total class -93			

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