

DEPARTMENT OF ELECTRICAL ENGINEERING
GOVERNMENT POLYTECHNIC, BARGARH



LESSON PLAN

CIRCUIT SIMULATION LAB (PR 2)

3RD SEMESTER

ELECTRICAL ENGINEERING

PREPARED BY SMT. PRITEE P. MINZ

SR. LECTURER (ELECTRICAL)

DEPARTMENT OF ELECTRICAL ENGINEERING

VISION:

To produce Electrical Engineer professionals who can contribute for socio-economic and technological development to meet global needs.

MISSION:

M1 - To strengthen academic infrastructure leading to quality professional by using modern technical tools and technologies.

M2 - To impart innovative knowledge among the students and make more industry-institution programs to make them successful professionals for serving the society.

M3 - To provide a learning environment to improve problem solving abilities, leadership abilities, ethical responsibilities and lifelong learning.

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

PEO1: Apply electrical engineering knowledge and practical skills to solve well-defined engineering problems using modern tools and techniques.

PEO2: Perform effectively in industry and society as competent junior engineer, supervisors, or entrepreneurs with ethical and sustainable engineering practices.

PEO3: Demonstrate teamwork, communication, leadership, and project management skills in professional engineering activities.

PEO4: Engage in lifelong learning and adapt to emerging technologies for career growth and higher education.

PROGRAM SPECIFIC OUTCOMES

The electrical diploma engineers will be able to:

PSO1:-Apply the fundamentals of mathematics, science and engineering knowledge to identify, formulate, design and investigate engineering problems of electric circuits, analog and digital electronics, control system, electrical machines and power system.

PSO2:- Apply the appropriate techniques and modern engineering hardware and software tools in electrical engineering to engage in life-long learning and to successfully adapt in multidisciplinary environments.

PSO3:-Work professionally in power systems engineering, Electrical machinery and electrical circuit.

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DISCIPLINE: EE		SEMESTER: 3rd	NAME OF THE TEACHING FACULTY: PRITEE P. MINZ, Sr. LECTURER (EE)
SUBJECT: Circuit and Simulation Lab		Total Period-90 Lab Period/week- 6 Hrs	
WEEK	CLASS DAY	THEORY TOPICS	
1	1	Demonstration of Experiment 1,2 and 3	
	2	Demonstration of Experiment 4,5 and 6	
2	3	Measurement of equivalent resistance in series and parallel circuit	
	4	Verification of KCL and KVL	
3	5	Verification of Super position theorem	
	6	Verification of Thevenin's Theorem	
4	7	Verification of Norton's Theorem	
	8	Verification of Maximum power transfer Theorem	
5	9	Comprehensive Viva-Voce	
	10	Demonstration of Experiment 5 and 6	
6	11	Demonstration of Experiment 7	
	12	Demonstration of Experiment 8 and 9	
7	13	Measurement of power and power factor using series R-L-C Load.	
	14	Determine resonant frequency of series R-L-C circuit.	
8	15	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.	
	16	Study of Low pass filter & determination of cut-off frequency	
9	17	Study of High pass filter & determination of cut-off frequency	
	18	Comprehensive Viva-Voce	
10	19	Introduction to P-Spice/MATLAB software	
	20	Demonstration to design various circuit by using P-Spice/MATLAB software	
11	21	Construct the Superposition theorem circuits using P-Spice/MATLAB software and compare the measurements and waveforms.	
	22	Construct the Series Resonant circuits using P-Spice/MATLAB software and compare the measurements and waveforms.	
12	23	Construct the Transient Response in R-L-C series circuits using P-Spice/MATLAB software and compare the measurements and waveforms.	
	24	Remedial classes and Virtual Lab	
13	25	Remedial classes and Virtual Lab	
	26	Remedial classes and Virtual Lab	
14	27	Comprehensive Viva-Voce	
	28	Comprehensive Viva-Voce	
15	29	Comprehensive Viva-Voce	
	30	Sessional Exam & Record submission	