Government Polytechnic, Balangir

Department of Department of Electrical Engineering

LESSON PLAN 2026-27(WINTER)

NAME OF THE Faculty : Subodh Kanta Barik

Subject: TH:2- ELECTRICAL CIRCUITS
Program: Diploma in Electrical Engineering
Semester: 3rd
Total Contact Hours: 45
Total Marks: 100
Assessment: Internal Assessment – 30, End Term – 70

COURSE OUTCOMES:
After the completion of this course, the students will be able to:
CO1. Explain various characteristics of different single phase AC series, AC parallel circuits and terms related to three phase circuits
CO2. Solve problems using network reduction & principles of circuit analysis
CO3. ApplyNetwork theorems in analyzing and solving electrical circuit problems
CO4. Explain the behavior of circuit in transient condition.
CO5. Describe two-port networks

Period	Unit	Topic	Learning Objective	Activity	CO	Learning Methodology	Homework
1	I	RL, RC, RLC series	Calculate impedance	Numericals	CO1	PBL	Problems
2	I	Power factor & power	Explain power triangle	Exercises	CO1	Lecture	PF numericals
3	I	Resonance & Q-factor	Explain resonance	Simulation	CO1	ICT	Assignment
4	II	RL parallel	Analyze circuit	Numericals	CO1	Lecture	Problems
5	II	RC parallel	Explain behavior	Examples	CO1	Lecture	Problems
6	II	RLC parallel	Circuit analysis	Numericals	CO1	Lecture	Problems
7	II	Phasor & impedance	Construct diagrams	Drawing	CO1	Board work	Draw diagrams
8	II	Power in parallel	Calculate power	Exercises	CO1	PBL	Numericals
9	II	Parallel resonance	Explain condition	Simulation	CO1	ICT	Notes
10	II	Bandwidth & Q	Calculate bandwidth	Examples	CO1	Lecture	Problems
11	II	Revision/Test	Assess learning	Quiz	CO1	Assessment	Revise
12	III	3-phase introduction	Explain system	Discussion	CO1	Lecture	Notes
13	III	Phase sequence	Identify sequence	Demo	CO1	Demo	Assignment
14	III	Star connection	Explain star	Drawing	CO1	Lecture	Circuit
15	III	Delta connection	Explain delta	Numericals	CO1	Lecture	Problems
16	III	Line & phase quantities	Calculate values	Exercises	CO1	PBL	Problems
17	III	Balanced/Unbalanced load	Differentiate	Case study	CO1	Interactive	Notes
18	III	Neutral shift	Explain effect	Examples	CO1	Lecture	Problems
19	III	Three-phase power	Calculate power	Exercises	CO1	Lecture	Assignment
20	IV	Source transformation	Apply concept	Examples	CO2	Lecture	Problems
21	IV	Star-Delta transformation	Solve conversions	Exercises	CO2	PBL	Assignment
22	IV	Mesh analysis	Solve mesh	Numericals	CO2	Lecture	Problems
23	IV	Node analysis	Solve nodes	Numericals	CO2	Lecture	Problems
24	IV	Revision/Test	Review	Quiz	CO2	Assessment	Revise
25	V	Superposition theorem	Apply theorem	Examples	CO3	Lecture	Problems
26	V	Applications	Analyze circuits	Exercises	CO3	PBL	Assignment
27	V	Thevenin theorem	Equivalent circuit	Numericals	CO3	Lecture	Problems
28	V	Norton theorem	Equivalent circuit	Examples	CO3	Lecture	Problems
29	V	Maximum Power Transfer	Apply theorem	Exercises	CO3	Lecture	Assignment
30	V	Reciprocity theorem	Explain concept	Discussion	CO3	Lecture	Notes
31	V	Mixed numericals	Solve problems	Practice	CO3	PBL	Worksheet
32	V	Revision	Review	Quiz	CO3	Interactive	Revise
33	V	Unit Test	Assessment	Written test	CO3	Assessment	Corrections
34	VI	Introduction to Two-Port	Explain concept	Discussion	CO5	Lecture	Notes
35	VI	Z-parameters	Calculate parameters	Examples	CO5	Lecture	Problems
36	VI	Y-parameters	Calculate parameters	Exercises	CO5	Lecture	Problems
37	VI	ABCD parameters	Explain transmission	Numericals	CO5	Lecture	Assignment
38	VI	Hybrid parameters	Calculate h-parameters	Exercises	CO5	Lecture	Problems
39	VI	Parameter conversion	Interrelationships	Practice	CO5	PBL	Worksheet
40	VI	Interconnection	Analyze networks	Discussion	CO5	Lecture	Assignment
41	VI	Final Revision	Complete review	Quiz	CO1-CO5	Interactive	Prepare for exam

01.07.26
Signature of Faculty

01.07.26
Signature of HOD