# LESSON PLAN

**SUB:- ELECTRICAL CIRCUIT**

**BRANCH:- ELECTRICAL ENGG.**

**SEMESTER:3rd**

**NAME OF FACULTY: - ASHWINI KUMAR SAHU**

# GOVERNMENT POLYTECHNIC, BHADRAK

**SESSION:2025-26**

Hod Electrical 11-07-25

HOD (ELECT.)
G.P.BHADRAK

Academic Co-ordinator 11-7-25

Academic Co-ordinator

Principal
Govt. Polytechnic Bhadrak 11.07.25

Principal
Govt.Polytechnic
Bhadrak

| Discipline: Electrical Engg. | Semester: 3rd | Name of the Teaching Faculty : ASHWINI KUMAR SAHU,Sr. Lect. |
|---|---|---|
| Subject:ELECTRICAL CIRCUIT | No. of Days/per week class allotted:3 | Semester from date: 14.07.2025 To Date: 15.11.2025<br><br>No. of Weeks:15 |
| **Week** | **Class Day** | **Theory** |
| 1st | 1st | **SinglePhaseA.C SeriesCircuits**<br>Generation of alternating voltage<br>Phasor representation of sinusoidal quantities |
| | 2nd | R, L,C circuit elements its voltage and current response<br>R-L, R-C, R-L-C combination of A.C series circuit |
| | 3rd | R-L,R-C,R-L-C combination of A.C series circuit |
| 2nd | 1st | Impedance , reactance ,impedance triangle<br>Power factor, active power, reactive power, apparent power Power triangle and vector diagram |
| | 2nd | Resonance, Bandwidth |
| | 3rd | Quality factor and voltage magnification in series R-L,R-C, R-L-C circuit |
| 3rd | 1st | Solving Numerical problems |
| | 2nd | **Single Phase A.C Parallel Circuits**<br>R-L,R-C parallel combination of A.C. circuits |
| | 3rd | R-L-C parallel combination of A.C. circuits |
| 4th | 1st | Solving Numerical problems |
| | 2nd | Impedance reactance, phasor diagram, impedance triangle, |
| | 3rd | Power factor,active power,apparent power,reactive power, power triangle |

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| 5th | 1st | Resonance in parallel R-L,R-C, R-L-C circuit |
| | 2nd | Bandwidth ,Quality factor and voltage magnification |
| | 3rd | Solving Numerical problems |
| 6th | 1st | **Three Phase Circuits**<br>Phasor and complex representation of three phase supply<br>Phase sequence and polarity<br>Types of three-phase connections |
| | 2nd | Phase sequence and polarity,<br>Types of three-phase connections |
| | 3rd | Phase and line quantities in three phase star system |
| 7th | 1st | Phase and line quantities in three phase delta system |
| | 2nd | Solving Numerical problems |
| | 3rd | Balanced and unbalanced load<br>Neutral shift in unbalanced load |
| 8th | 1st | Three phase power, active, reactive and apparent power in star and delta system. |
| | 2nd | Solving Numerical problems |
| | 3rd | **Network Reduction and Principles of Circuit Analysis**<br>Source transformation<br>Star/delta and delta/star transformation |
| 9th | 1st | Star/delta and delta/star transformation |
| | 2nd | Mesh Analysis |
| | 3rd | Node Analysis |
| 10th | 1st | Solving Numerical problems |
| | 2nd | **Network T heorems**<br>Superposition theorem |

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| | | Thevenin's theorem |
| | 3rd | Solving Numerical problems |
| 11th | 1st | Norton's theorem |
| | 2nd | Maximum power transfer theorem |
| | 3rd | Solving Numerical problems |
| 12th | 1st | Reciprocity Theorem |
| | 2nd | Solving Numerical problems |
| | 3rd | Solving Numerical problems |
| 13th | 1st | **Two Port Network** Open Circuit Impedance Parameters |
| | 2nd | Short Circuit Admittance Parameters, |
| | 3rd | Transmission Parameters, |
| 14th | 1st | Hybrid Parameters |
| | 2nd | Solving Numerical problems |
| | 3rd | Interrelationship of Two Port Network |
| 15th | 1st | Interrelationship of Two Port Network |
| | 2nd | Inter Connection of Two Port Network |
| | 3rd | Solving Numerical problems |

Signature of the faculty

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