# LESSON PLAN

DEPT OF ELECT. ENGG GOVT. POLY, BHADRAK ESTD-2017

**SUB:** ELECTRICAL CIRCUITS LABORATORY

**BRANCH:- ELECTRICAL ENGG.**

**SEMESTER: 3rd**

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

# GOVERNMENT POLYTECHNIC, BHADRAK

**SESSION:2025-26**

Hod Electrical

HOD (ELECT.)
G.P.BHADRAK

Academic Co-ordinator

Academic Co-ordinator

Principal
Govt. Polytechnic Bhadrak

Principal
Govt.Polytechnic
Bhadrak

| DISCIPLINE *ELECTRICAL* | SEMESTER *3rd* | NAME OF THE TEACHING FACULTY<br>ASHWINI KUMAR SAHU ( Sr.Lect. in Elect. Engg.) |
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| **SUBJECT**<br>ELECTRICAL CIRCUITS LABORATORY | **NO. OF DAYS/WEEK CLASS ALLOTTED – 60Hr(4P/week)** | **SEMESTER FROM DATE 14.07.2025 to 15.11.2025** |
| WEEK | CLASS DAY | PRACTICAL TOPICS |
| 1st | $E_1/E_2$ | Introduction to laboratory rules & regulation. |
| 2nd | $E_1/E_2$ | Use voltmeter, ammeter, wattmeter to determine active, reactive and apparent power consumed in given R-L-C series circuit. Draw phasor diagram. |
| 3rd | $E_1/E_2$ | Use variable frequency supply to create resonance in given series R-L-Circuit or by using variable inductor or variable capacitor. |
| 4th | $E_1/E_2$ | Use voltmeter, ammeter, wattmeter, p.f meter to determine current, p.f.,active, reactive and apparent power for given R-L-C parallel circuit with series connection of resistor and inductor in parallel with capacitor. |
| 5TH | $E_1/E_2$ | Use voltmeter, ammeter, wattmeter, p.f meter to determine current, p.f.,active, reactive and apparent power for given R-L-C parallel circuit with series connection of resistor and inductor in parallel with capacitor. |
| 6TH | $E_1/E_2$ | Use voltmeter, ammeter, wattmeter ,p.f meter to determine line and phase quantities of voltage and current for balanced three phase star and delta connected load and calculate active, reactive, and apparent power. Draw Phasor diagram. |
| $7^{TH}$ | $E_1/E_2$ | Use voltmeter, ammeter to determine current through the given branch of a electric network by applying mesh analysis. |
| $8^{TH}$ | $E_1/E_2$ | Use voltmeter, ammeter to determine current through the given branch and voltage across the given element of circuit by applying superposition theorem. |
| $9^{TH}$ | $E_1/E_2$ | Use voltmeter, ammeter to determine equivalent circuit parameter in a given circuit by applying Thevenin's theorem. |
| $10^{TH}$ | $E_1/E_2$ | Use voltmeter, ammeter to determine equivalent circuit parameter in a given circuit by applying Norton's |

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|---|---|---|
| | | theorem |
| 11TH | $E_1/E_2$ | Use voltmeter, ammeter to determine load resistance for maximum power transfer for a given circuit by applying maximum power transfer theorem. |
| 12TH | $E_1/E_2$ | Using Simulink, create resonance in given series R-L-C circuit |
| 13TH | $E_1/E_2$ | Verify network theorems(Superposition, Thevenin's, Norton's, Maximum power transfer) using Simulink Simscape |
| 14TH | $E_1/E_2$ | Verify network theorems(Superposition, Thevenin's, Norton's, Maximum power transfer) using Simulink Simscape |
| 15TH | $E_1/E_2$ | Laboratory assessment |

SIGNATURE OF FACULTY

ASHWINI KU.SAHU
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