**SYNERGY SCHOOL OF ENGINEERING**

**DEPARTMENT OF ELECTRICAL ENGINEERING**

| **Discipline: Electrical Engineering** | **Semester : - 3rdSem EE** | **Name of the teaching faculty: - SUNANDITA SAHOO** |
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| **Subject: - ELECTRICAL CIRCUITS** | **No. of Days/week class Allotted: -3** | **No. of weeks: -15**<br><br>**SESSION-2026-2027 WINTER**<br>**Starting date-** 01.07.2026<br>**Closing date-** 05.11.2026 |
| **No. of week** | **No. of class** | **Topic to be Taught** |
| 1 | 1ST | **Single Phase A.C Series Circuits**<br>Generation of alternating voltage |
| | 2ND | Phasor representation of sinusoidal quantities |
| | 3RD | R-L, R-C, R-L-C combination of A.C series circuit |
| 2 | 1ST | Impedance, reactance, impedance triangle |
| | 2ND | Power factor, active power, reactive power, apparent power |
| | 3RD | Power triangle and vector diagram |
| 3 | 1ST | Resonance, Bandwidth |
| | 2ND | Resonance, Bandwidth |
| | 3RD | **Single Phase A.C Parallel Circuits**<br>R-L, R-C and R-L-C parallel combination of A.C. circuits |
| 4 | 1ST | Power factor, active power, apparent power, reactive power, power triangle |
| | 2ND | Resonance in parallel R-L, R-C, R-L-C circuit |
| | 3RD | Bandwidth, Quality factor and voltage magnification |
| 5 | 1ST | Bandwidth, Quality factor and voltage magnification |
| | 2ND | **Three Phase Circuits**<br>Phasor and complex representation of three phase supply |
| | 3RD | Phasor and complex representation of three phase supply |
| 6 | 1ST | Phase sequence and polarity |
| | 2ND | Types of three-phase connections |
| | 3RD | Phase and line quantities in three phase star and delta system |
| 7 | 1ST | Balanced and unbalanced load |
| | 2ND | Neutral shift in unbalanced load |
| | 3RD | Three phase power, active, reactive and apparent power in star and delta system<br>Solve numerical problems |
| 8 | 1ST | Three phase power, active, reactive and apparent power in star and delta system |
| | 2ND | Three phase power, active, reactive and apparent power in star and delta system |
| | 3RD | Node Analysis |
| 9 | 1ST | Node Analysis |
| | 2ND | **Network Theorems**<br>Superposition theorem,<br>Solve numerical problems |
| | 3RD | Superposition theorem,<br>Solve numerical problems |

Sahoo 02.06.2026

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| 10 | 1ST | Thevenin's theorem |
| | 2ND | Solve numerical problems |
| | 3RD | Thevenin's theorem |
| 11 | 1ST | Norton's theorem<br>Solve numerical problems |
| | 2ND | Norton's theorem<br>Solve numerical problems |
| | 3RD | Maximum power transfer theorem<br>Solve numerical problems |
| 12 | 1ST | Maximum power transfer theorem<br>Solve numerical problems |
| | 2ND | Reciprocity Theorem |
| | 3RD | Reciprocity Theorem |
| 13 | 1ST | **Two Port Network**<br>Open Circuit Impedance Parameters |
| | 2ND | Open Circuit Impedance Parameters |
| | 3RD | Short Circuit Admittance Parameters, Transmission Parameters, Hybrid Parameters |
| 14 | 1ST | Short Circuit Admittance Parameters, Transmission Parameters, Hybrid Parameters |
| | 2ND | Interrelationship of Two Port Network |
| | 3RD | Interrelationship of Two Port Network |
| 15 | 1ST | Interrelationship of Two Port Network |
| | 2ND | Inter Connection of Two Port Network |
| | 3RD | Inter Connection of Two Port Network |

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02.06.2026

Prepared by

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11/06/2026

HOD EE

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ELECTRICAL ENGG. DEPT.
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