# BHUBANANANDA ORISSA SCHOOL OF ENGINEERING, CUTTACK

## ELECTRICAL ENGG.DEPARTMENT

## LESSON PLAN

SEMESTER: 3RD (B̶) (C)

SESSION – winter (2021-22)

SUBJECT: CNT

**NAME OF FACULTY:** SRIKANTA THAKUR

| Discipline: **Electrical Engg.** | Semester:**3rd (C)** | Name of the teaching faculty: **SRIKANTA THAKUR** |
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| Subject-**CNT** | No. of Days/per week class allotted:**05PERIODS /WEEK** (TUE,WED,THU,-1 period each) **FRI-2PERIODS** | Semester: From Date: **1/10/2021**   To    Date:**08/01/2022** No. of weeks: **15 WEEKS** |
| Week | Class Day | Theory/Practical Topics |
| 1st (1/10/2021-2/10/2021) | 1/10/2021 **(2PERIODS)** | **MAGNETIC CIRCUITS:** 1.1 Introduction 1.2 Magnetizing force, Intensity, MMF, flux and their relations |
| 2nd (4/10/2021-9/10/2021) | 5/10/2021 | 1.3 Permeability, reluctance and permeance. |
| | 07/10/2021 | 1.4 Analogy between electric and Magnetic Circuits |
| 3rd (11/10/2021-16/10/2021) | | **PUJA HOLIDAY** |
| 4th (18/10/2021-23/10/2021) | 21/10/2021 | 1.5 B-H Curve |
| | 22/10/2021 **(2PERIODS)** | 1.6 Series & parallel magnetic circuit. 1.7 Hysteresis loop |
| 5th (25/10/2021-30/10/2021) | 26/10/2021 | **COUPLED CIRCUITS:** 2.1 Self Inductance and Mutual Inductance |
| | 27/10/2021 | 2.2  Conductively coupled circuit and mutual impedance |
| | 28/10/2021 | 2.3  Dot convention |
| | 29/10/2021 **(2PERIODS)** | 2.4 Coefficient of coupling 2.5 Series and parallel connection of coupled inductors |
| 6th (01/11/2021-06/11/2021) | 02/11/2021 | 2.5 Series and parallel connection of coupled inductors. |
| | 03/11/2021 | **Class test 1** |

| | 05/11/2021 **(2PERIODS)** | 2.6 Solve numerical problems |
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| 7th (08/11/2021-13/11/2021) | 09/11/2021 | **CIRCUIT ELEMENTS AND ANALYSIS:**<br>3.1 Active, Passive, Unilateral & bilateral, Linear & Non linear elements |
| | 10/11/2021 | 3.2.Mesh Analysis, Mesh Equations by inspection |
| | 11/11/2021 | 3.3 Super mesh Analysis |
| | 12/11/2021 **(2PERIODS)** | 3.4 Nodal Analysis, Nodal Equations by inspection<br>3.5 Super node Analysis. |
| 8th (15/11/2021-20/11/2021) | 16/11/2021 | 3.6 Source Transformation Technique<br>3.7 Solve numerical problems (With Independent Sources Only) |
| | 17/11/2021 | **NETWORK THEOREMS:**<br>4.1 Star to delta and delta to star transformation |
| | 18/11/2021 | 4.2 Super position Theorem |
| 9th (22/11/2021-27/11/2021) | 23/11/2021 | **Class test 2** |
| | 24/11/2021 | 4.3 Thevenin's Theorem |
| | 25/11/2021 | 4.4 Norton's Theorem |
| | 26/11/2021 **(2PERIODS)** | 4.5 Maximum power Transfer Theorem.<br>4.6 Solve numerical problems (With Independent Sources Only) |
| 10th (29/11/2021-04/12/2021) | 30/11/2021 | **AC CIRCUIT AND RESONANCE:**<br>5.1 A.C. through R-L, R-C & R-L-C Circuit |
| | 01/12/2021 | 5.2 Solution of problems of A.C. through R-L, R-C & R-L-C series Circuit by complex algebra method. |
| | 02/12/2021 | 5.3 Solution of problems of A.C. through R-L,R-C&R-L-C parallel & Composite circuits |
| | 03/12/2021 **(2PERIODS)** | 5.4 Power factor & power triangle. |

| | | 1<sup>st</sup> Internal Assessment |
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| 11<sup>th</sup> (06/12/2021-11/12/2021) | 07/12/2021 | |
| | 08/12/2021 | 5.5 Deduce expression for active, reactive, apparent power. |
| | 09/12/2021 | 5.6 Derive the resonant frequency of series resonance and parallel resonance circuit |
| | 10/12/2021 **(2PERIODS)** | 5.7 Define Bandwidth, Selectivity & Q-factor in series circuit.<br>5.8 Solve numerical problems |
| 12<sup>th</sup> (13/12/2021-18/12/2021) | 14/12/2021 | **POLYPHASE CIRCUIT:**<br>6.1 Concept of poly-phase system and phase sequence<br>6.2 Relation between phase and line quantities in star & delta connection |
| | 15/12/2021 | 6.3 Power equation in 3-phase balanced circuit |
| | 16/12/2021 | 6.4 Solve numerical problems |
| | 17/12/2021 **(2PERIODS)** | 6.5 Measurement of 3-phase power by two wattmeter method.<br>6.6 Solve numerical problems. |
| 13<sup>th</sup> (20/12/2021-25/12/2021) | 21/12/2021 | **TRANSIENTS:**<br>7.1 Steady state & transient state response. |
| | 22/12/2021 | 7.2 Response to R-L, R-C & RLC circuit under DC condition. |
| | 23/12/2021 | **Class Test-3** |
| | 24/12/2021 **(2PERIODS)** | 7.2 Response to R-L, R-C & RLC circuit under DC condition.<br>7.3 Solve numerical problems. |
| 14<sup>th</sup> (27/12/2021-01/01/2022) | 28/12/2021 | 7.3 Solve numerical problems |
| | 29/12/2021 | **TWO-PORT NETWORK:**<br>8.1 Open circuit impedance (z)parameters |
| | 30/12/2021 | 8.2 Short circuit admittance (y)parameters |
| | 31/12/2022 **(2PERIODS)** | 8.3 Transmission (ABCD)parameters<br>8.4 Hybrid (h) parameters. |

| | | 8.5 Inter relationships of different parameters. |
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| 15th (03/1/2022-08/01/2022) | 04/01/2022 | 8.6 T and π representation.<br>8.7 Solve numerical problems |
| | 05/01/2022 | **FILTERS:**<br>9.1 Define filter<br>9.2 Classification of pass Band, stop Band and cut-off frequency.<br>9.3 Classification of filters. |
| | 06/01/2022 | **Class Test-4** |
| | 07/01/2022 **(2PERIODS)** | 9.4 Constant – K low pass filter.<br>9.5 Constant – K high pass filter.<br>9.6 Constant – K Band pass filter.<br>9.6 Constant – K Band elimination filter.<br>9.6 Solve Numerical problems |