# Lesson Plan

**Name of the Subject :** ELECTRICAL ENGINEERING AND ELECTRONICS ENGINEERING

**Class& Semester :** II B.Tech, EEE – A/s & B/s – I Semester

**Name of the faculty Member : Mr.V.V.SUPURA**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S. No.** | **Topic** | **No. of periods** | **Book(s) followed** | **Remarks** |
| UNIT – I: INTRODUCTION TO ELECTRIC CIRCUITS AND MEASURMENTS | | | | |
| 1 | Introduction to Circuit elements | 1 | T1 |  |
| 2 | Definition of Ohm’s Law | 1 | T1,T2 |
| 3 | Definition of Kirchhoff’s Laws | 1 | T1 |
|  | Tutorial | 1 |  |
| 4 | Network reduction Techniques | 1 | T1& T2 |
| 5 | Mesh analysis and Nodal Analysis | 1 | T2 |
| 6 | Thevenin’s Theorem | 1 | T1 |
|  | Tutorial | 1 |  |
| 7 | Superposition Theorem | 1 | T1 |
| 8 | Alternating Quantities & Concept of Impedance | 2 | T1 |
|  | Tutorial | 1 |  |
| **Total periods required:** | | **9+3T = 12** | | |
| **UNIT – II: DC MACHINES & TRANSFORMER** | | | | |
| 1 | Construction and working principle of DC Generator | 1 | T1 |  |
| 2 | Derivation of EMF Equation | 1 | T1& T2 |
| 3 | Different Types of Generators | 1 | T1& T2 |
|  | Tutorial | 1 |  |
| 4 | Operation and working principle of DC Motor | 2 | T1& T2 |
| 5 | Different Types of Motors | 1 | T1 |
| 6 | Derivation of Torque Equation & Efficiency | 3 | T1 |
|  | Tutorial | 1 |  |
| 7 | Applications of DC Motors | 2 | T1& T2 |
| 8 | Principle of Operation of Single Phase Transformer | 1 | T1 |
| 9 | EMF Equation of Transformer | 1 | T1 |
| 10 | Losses, Efficiency and Regulation of Induction Motor | 1 | T1 |
|  | Tutorial | 1 |  |
| **Total periods required:** | | **14+3T = 17** | | |
| **UNIT - III: AC MACHINES & SINGLE PHASE MOTORS** | | | | |
| 1 | Concept of Three Phase Supply | 1 | T1 |  |
| 2 | Construction, Operation and Working of Three Phase Induction Motors | 2 | T1& T2 |
| 3 | Types of Three Phase Induction Motors | 1 | T1& T2 |
| 4 | Slip – Torque Characteristics | 1 | T1 |
|  | Tutorial | 1 |  |
| 5 | Applications of Three phase Induction Motor | 1 | T1 |
| 6 | Working Principle & Operation of Alternator | 1 | T1& T2 |
| 7 | Concept of Regulation | 1 | T1 |
| 8 | Working Principle of Shaded pole type motor | 1 | T1 |
|  | Tutorial | 1 |  |
| 9 | Working Principle of Repulsion motors | 1 | T1 |
| 10 | Working Principle of stepper motor | 1 | T1 |
| **Total periods required:** | | **11+2T = 13** | | |
| **UNIT – IV: DIODE AND TRANSISTOR CHARACTERISTICS** | | | | |
| 1 | Working principle & V-I Characteristics of PN Junction Diode | 1 | T2& T3 |  |
| 2 | Working principle & V-I Characteristics of Zener Diode | 1 | T2& T3 |
| 3 | Definition of Rectifier | 1 | T2 |
| 4 | Half wave, Full wave & Bridge Rectifier | 2 | T2 |
| 5 | Numerical Problems | 1 | T2& T3 |
|  | Tutorial | 1 |  |
| 6 | PNP and NPN Junction Transistor | 1 | T2& T3 |
| 7 | Single stage CE Amplifier | 1 | T2 |
| 8 | Frequency response of CE Amplifier | 1 | T2 |
| 9 | operation and characteristics Junction Field Effect Transistor | 1 | T2 |
|  | Tutorial | 1 |  |
| 10 | SCR characteristics and its applications | 1 | T2 |
| **Total periods required:** | | **11+2T = 13** | | |
| **UNIT – V: CATHODE RAY OSCILLOSCOPE & REGULATED POWER SUPPLIES** | | | | |
| 1 | Working Principle of CRO | 1 | T2& T3 |  |
| 2 | Working Principle of CRT | 1 | T2& T3 |
| 3 | Deflection sensitivity | 1 | T2 |
| 4 | Electrostatic and Magnetic deflection | 1 | T2 |
|  | Tutorial | 1 |  |
| 5 | Applications of CRO | 1 | T2& T3 |
| 6 | Voltage, Current and Frequency Measurements | 1 | T2 |
| 7 | Principle of operation of Regulated Power Supply | 1 | T2& T3 |
| 8 | Applications of Regulated Power Supply | 1 | T2 |
| 9 | Principle of operation of functional generators | 1 | T2 |
| **Total periods required:** | | **9+1T = 10** | | |
| **Grand total periods required:** | | **54+11T = 65** | | |

**TEXT BOOKS:**

1. J.P. Nagrath & D. P Kothari: Basic Electrical Engineering, PHI Publications
2. HUGHES: Electrical and Electronic Technology, Pearson Publications.
3. Mehta, V.K: Principles of Electrical & Electronics Engineering, S. Chandan & Company.

**REFERENCE BOOKS:**

1. Helfrick and Cooper: Modern Electronic Instrumentation and Measurement Techniques, PHI Publications.
2. R.L.Boylestad and Louis Nashelsky, Electronic Devices and Circuits, 9th Edition, Printice Hall International Publishers, 2006.

|  |  |
| --- | --- |
| **Signature of the faculty Member** | **HOD, EEE** |