

LESSON PLAN

Subject :- TH:2 Electric Power Transmission and Distribution **(Code) TH-2** EEPC204 **Name of faculty:-** Er Sujata Samal

Semester :-4th

Class allotted 4p/w

Branch :- Electrical Engineering

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| Discipline | Semester:-4 TH | From date:-23/12/25 To date:18/4/26 | |
| Subject:EPTD | No. of days/ per week 4p/w: | Theory –Topics/Lesson | 45P/45H |
| DATE | PERIOD | TOPIC COVERED | REMARKS |

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| 23/12/25 to 15/1/26 | | <p>Unit No. I Basics of Transmission and Distribution</p> <p>1.1 Single line diagrams with components of the electric supply transmission and distribution systems</p> <p>1.2 Classification of transmission lines</p> <p>1.3 Primary and secondary transmission</p> <p>1.4 Standard voltage level used in India</p> <p>1.5 Classification of transmission lines: based on type of voltage, voltage level, length and others</p> <p>1.6 Characteristics of high voltage for power transmission</p> <p>1.7 Method of construction of electric supply transmission system- 110 kV, 220 kV, 400 kV</p> <p>1.8 Method of construction of electric supply distribution systems- 220 V, 400V, 11 kV, 33 kV</p> | |
| 16/1/26 to 07/02/26 | | <p>Unit No. II: Transmission Line Parameters and Performance</p> <p>2.1 Line Parameters: Concepts of R, L and C of line parameters and types of lines</p> <p>2.2 Performance of short line: Efficiency, regulation and its derivation, effect of power factor, vector diagram for different power factor</p> <p>2.3 Performance of medium line: representation, nominal 'T', nominal 'π' and end condenser methods</p> <p>2.4 Transposition of conductors and its necessity</p> | |
| 09/02/26 to 27/02/26 | | <p>Unit No. III: Extra High Voltage Transmission</p> <p>3.1 Extra High Voltage AC (EHVAC) transmission line: Necessity, high voltage substation components such as transformers and other switchgears</p> <p>3.1.1 Advantages, limitations and applications of EHVAC</p> <p>3.1.2 EHVAC lines in India</p> <p>3.2 Ferranti and Corona effect</p> <p>3.3 High Voltage DC (HVDC) Transmission Line: Necessity</p> | |

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| | | <p>components, advantages, limitations and applications</p> <p>3.3.1 Layout of monopolar, bi-Polar and homo-polar transmission lines of HVDC 3.3.2 HVDC Lines in India</p> <p>3.4 Features of EHVAC and HVDC transmission line</p> <p>3.5 Flexible AC Transmission line: Features, types of FACTS controller</p> <p>3.6 New trends in wireless transmission of electrical power</p> | |
| 28/02/26 to 21/03/26 | | <p>Unit No. IV: A.C Distribution System</p> <p>4.1 AC distribution: Components classification, requirements of an ideal distribution system, primary and secondary distribution system</p> <p>4.2 Feeder and distributor, factors to be considered in design of feeder and distributor</p> <p>4.3 Types of different distribution schemes: radial, ring, and grid, layout, advantages, disadvantages and applications</p> <p>4.4 Voltage drop, sending end and receiving end voltage</p> <p>4.5 Distribution Sub-Station: Classification, site selection, advantages, disadvantages and applications</p> <p>4.6 Single Line diagram (layout) of 33/11KV Sub-Station, 11KV/400V sub-station</p> <p>4.7 Symbols and functions of their components</p> | |
| 23/03/26 to 18/4/26 | | <p>Unit No. V: Components of Transmission and Distribution Line</p> <p>5.1 Overhead Conductors: Properties of material, types of conductor with trade names, significance of sag</p> <p>5.2 Line supports: Requirements, types of line structures and their specifications, methods of erection</p> <p>5.3 Line Insulators</p> <p>5.3.1 Properties of insulating material</p> <p>5.3.2 Selection of material</p> <p>5.3.3 Types of insulators and their applications</p> <p>5.3.4 Causes of insulator failure</p> <p>5.3.5 Derivation of equation of string efficiency for string of three suspension insulator</p> <p>5.3.6 Methods of improving string efficiency</p> <p>5.4 Underground Cables: Requirements, classification, construction, comparison with overhead lines, cable laying and cable jointing.</p> | |
| Signature of HOD | | Signature of Faculty | |