Lesson Plan

**Name of the faculty :** MANISHA GOEL

**Discipline :** Electrical

**Semester :** 4th

**Subject :** INSTALLATION AND MAINTENANCE OF ELECTRICAL EQUIPMENTS

**Lesson Plan Duration :** 15 weeks (from MARCH 2023 ONWARDS)

Work load (Lecture/Practical) per week : Lectures-04

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| **Week** | **Theory** | |
| **Lecture day** | **Topic (Including assignment/test)** |
| 1st | Ist | Tools, accessories and instruments required for installation |
| 2nd | Maintenance and repair work Knowledge of Indian Electricity rules |
| 3rd | Safety codes, causes and prevention of accidents |
| 4th | Artificial respiration of an electrocuted person, workmen's safety device |
| 2nd | 5th | Domestic Installation, Introduction |
| 6th | Testing of electrical installation of a building i.e Testing of insulation resistance to earth |
| 7th | Testing of insulation and resistance between conductors , Continuity or open circuit test |
| 8th | Installation of transmission and Distribution Lines,Erection of steel structures, |
| 3rd | 9th | Connecting jumpers, tee-off points |
| 10th | Joints and dead ends; crossing of roads, streets |
| 11th | Power/telecommunication lines and railway line |
| 12th | Earthing of transmission lines and guarding, spacing and configuration of conductors |
| 4th | 13th | Types of arrangement for suspension and strain insulators |
| 14th | Bird guards, anti-climbing devices and danger plates; sizes of conductor |
| 15th | Earthwire and guy wires, Testing and Commissioning. |
| 16th | Laying of service lines, earthing, |
| 5th | 17th | Workprovision of service fuses, installation of energy meters |
| 18th | Assignment |
| 19th | Assignment work |
| 20th | Sessional test |
| 6th | 21th | Installation of Underground Cables Inspection, storage, |
| 22th | Transportation and handling of cables, cable handling equipment |
| 23th | Cable laying introduction and one method of laying |
| 24th | Cable laying depths other methods methods |
| 7th | 25th | Clearances from other services such as: water pipes, sewerage, gas pipes, |
| 26th | Power and telecommunication cables and coordination with these service |
| 27th | Introduction to cable filling compounds, epoxy resins and hardeners |
| 28th | Cable jointing and terminations, testing and commissioning |
| 8th | 29th | Installation of Transformers Elementary idea regarding inspection and handling of transformers |
| 30th | Installation of power transformers |
| 31th | Installation of distribution transformers |
| 32th | Earthing system |
| 9th | 33th | Installation of pole mounted substation |
| 34th | Assignment work |
| 35th | Assignment work |
| 36th | Sessional test |
| 10th | 37th | Plinth mounted and grid substations |
| 38th | Installation of different components of substations viz. busbars, isolators |
| 39th | CT and PT, lightning arrestors, control and relay panels |
| 40th | HT/LT circuit breakers |
|  | 41th | Handling and inspection of electric motors |
| 11th | 42th | Handling and inspection of generators (AC and DC) |
| 43th | Drying out medium voltage distribution panels |
| 44th | Testing and commissioning |
| 12th | 45th | Definition and types of maintenance |
| 46th | Maintenance schedules, procedures |
| 47th | Authorized persons, danger notice, caution notice, permit to work |
| 48th | Arranging of shutdowns personally and temporary earths cancellation of permit and restoration of  supply |
| 13th | 49th | Patrolling and visual inspection of lines - points to be noted during patrolling from ground; special  inspections and night inspections |
| 50th | Location of faults using Meggar, effect of open or loose neutral connections |
| 51th | Provision of proper fuses on service lines and their effect on system, causes of dim and flickering lights. |
| 52th | Maintenance schedule of transmission and distribution system |
| 14th | 53th | Transformer maintenance and points to be attended to in respect of various items of equipment |
| 54th | Checking of insulation resistance, transformer oil level BDV test of oil |
| 55th | Measurement of earth resistance Maintenance schedule of distribution transformers |
| 56th | Checking and maintenance of busbars, isolating switche |
| 15th | 57th | HT/LT circuit breakers, LT switches. Power transformers |
| 58th | Maintenance schedule of grid substation |
| 59th | Over hauling of motors, preventive maintenance |
| 60th | Trouble shooting of electric motors & Maintenance schedule of AC and DC motors |