**Lesson Plan**

Name of faculty : Sita Devi

Discipline : Electrical Engineering

Semester : 4th

Subject : Transmission and distribution

Lesson plan duration : 15 weeks

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| Week | Theory |
|  | Lecture Day | Topic (Including assignment / Test) |
| **Unit-I** |
| 1st | 1 | Importance of electric power  |
| 2 | Power system components |
| 3 | Growth of power systems in india |
| 4 | Power supply network |
| 2nd | 5 | Single line diagram of a typical power system |
| 6 | Effect of voltage on conductor size |
| 7 | Effect of increase in voltage on the transmission line efficiency |
| 8 | Numerical on transmission efficiency |
| 3rd | 9 | Comparison of conductor vol |
| 10 | In typical supply system elementary high voltage DC transmission |
| 11 | DC transmission and its advantages and disadvantages |
| 12 | Comparison between AC and DC transmission system |
| **Unit-II** |
| 4th | 13 | Introduction to line parameter |
| 14 | Evaluation of inductance, capacitance for single phase |
| 15 | Evaluation of resistance for single phase |
| 16 | Three phase symmetrical parameters |
| 5th | 17 | Three phase unsymmetrical parameters |
| 18 | Transposed, untransposed single circuit |
| 19 | Double circuit lines, skin and proximity effect |
| 20 | Classification of line as short, medium and long |
| 6th | 21 | Representation and detailed performance analysis of these lines including abcd parameters |
| 22 | Numerical on abcd parameters |
| 23 | Detailed measurements and universal power circle diagram |
| 24 | Numerical based on above topic |
| **7th** | **1st Minor Test** |
| **Unit-III** |
| 8th  | 25 | Various types of line conductors |
| 26 | Line supports, poles and towers |
| 27 | Sag calculations |
| 28 | Effect of wind, ice and temperature |
| 9th | 29 | Stringing chart, sag template, line vibrations |
| 30 | Introduction to insulators |
| 31 | Types of insulator |
| 32 | Voltage distribution, string efficiency |
| 10th | 33 | Methods of increasing string efficiency |
| 34 | Phenomenon of corona |
| 35 | Disruptive critical voltage, Visual critical voltage |
| 36 | Corona loss, radio interference |
| **Unit-IV** |
| 11th | 37 | Introduction to underground cables |
| 38 | Classification and construction of underground cables |
| 39 | Insulation resistance  |
| 40 | Capacitance, Capacitance determination  |
| 12th | 41 | Assignment On under ground cable  |
| 42 | Power factor in cable |
| 43 | Capacitance grading  |
| 44 | Various method of grading |
| 13th | 45 | Use of inter sheath , losses |
| 46 | Heat dissipation and temperature rise in cable |
| 47 |  Current rating |
| 48 | Numerical problem |
| **14th** | **2nd Minor test** |
| 15th | 49 | Discussion on 2nd minor test |
|  | 50 | Comparison with overhead line |
|  | 51 | Advantage and disadvantage of underground cable |
|  | 52 | Various factor to be considered for selecting a cable |

 Sita Devi

Guest faculty In Electrical Engg.