Teaching Plan

AY 2021-22

An ISO 9001:2015 Certified Institution

PRIYADARSHINI INSTITUTE OF SCIENCE AND TECHNOLOGY FOR WOMEN

(Approved by AICTE, New Delhi and Affiliated to JNTUH Hyderabad)

SaiPrabhath Nagar , Khammam Rural -507003, Khammam Dist., Telangana State.

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TEACHINGPLAN

Name of the Faculty: Mrs. BalaSwatha **Subject Code:**EE822PE

Subject Name: Electrical Distribution Systems **Academic Year:** 2021-22

B.Tech IV Year II Sem

S. No	Unit No.	*Topics to be covered*	*Ref*	Teaching Method
1.	I	Introduction to distribution system	T1,R3	Chalk and Talk
2.		Distribution system planning, Factors effecting the Distribution system planning	T1,R3	Chalk and Talk
3.		Load modeling and characteristics	T1,R3	Chalk and Talk.
4.		Coincidence factor - contribution factor - Loss factor	T1,R3	Chalk and Talk
5.		Relationship between the load factor and loss factor. Load growth	T1,R3	Chalk and Talk
6.		Classification of loads (Residential, commercial, Agricultural and Industrial) and theircharacteristics	T1,R1	Chalk and Talk
7.		Numerical problems	T1,R1	Chalk and Talk
8.		Design Considerations of Distribution Feeders	T1,R1	Chalk and Talk
9.		Radial, loop and network types of primary feeders, Introduction to low voltage distribution systems (LVDS) and High voltage distribution systems (HVDS)	T1,R1	Chalk and Talk
10.		Factors effecting the feeder voltage level, feeder loading	T1,R1	Chalk and Talk
11.		Application of general circuit constants (A,B,C,D) to radial feeders, Numerical problems	T1,R1	Chalk and Talk
12.		Basic design practice of the secondary distribution system, secondary banking, secondary network types, secondary mains	T1,R1	Chalk and Talk
13.		Revision of general concepts and distribution Feeders	T1,R1	Chalk and Talk/ Quiz
14.		**Substations**: Location of Substations: Rating of distribution substation	T1,R1	Chalk and Talk
15.		Service area with 'n' primary feeders	T1,R1	Chalk and Talk
16.		Benefits derived through optimal location of substations.	T1,R1	Chalk and Talk

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17.		Optimal location of Substations (Perpendicular bisector rule and X, Y co-ordinate method).	T1,R1	Chalk and Talk
18.		Numerical problems	T1,R1	Chalk and Talk
19.	II	**System Analysis**: Voltage drop and power-loss calculations: Derivation for voltage drop and power loss in lines	T1,R1	Chalk and Talk
20.		Derivation for voltage drop and power loss for 1-ph unbalanced loads	T1,R1	Chalk and Talk
21.		Derivation for voltage drop and power loss for 1-ph balanced loads	T1,R1	Chalk and Talk
22.		Manual methods of solution for radial networks	T1,R1	Chalk and Talk
23.		Voltage drop and power loss for three phase balanced primary lines	T1,R1	Chalk and Talk
24.		Analysis of non-three phase systems, method to analyze the distribution feeder cost	T1,R1	Chalk and Talk
25.		Numerical problems	T1,R1	Chalk and Talk
26.		Revision of substations and System Analysis	T1,R1	Chalk and Talk / Quiz
27.	III	**Protection**: Objectives of distribution system protection	T1,T2	Chalk and Talk
28.		Types of common faults and procedure for fault calculations	T1,T2	Chalk and Talk
29.		Over current Protective Devices: Principle of operation of Fuses	T1,T2	Chalk and Talk
30.		Principle of operation of Auto-Circuit Recloser - and Auto-line sectionalizes	T1,T2	Chalk and Talk
31.		Principle of operation of circuit breakers	T1,R2	Chalk and Talk
32.		**Coordination**: Coordination of Protective Devices: Objectives of protection co-ordination, general coordination procedure	T1,T2	Chalk and Talk
33.		Types of protection coordination: Fuse to Fuse, Auto-Recloser to Fuse, Circuit breaker to Fuse, Circuit breaker to Auto-Recloser	T1,T2	Chalk and Talk
34.		Revision of protection and coordination	T1,R2	Chalk and Talk /Quiz
35.		Compensation for Power Factor Improvement	T1,T2	Chalk and Talk
36.		Capacitive compensation for power-factor control - Different types of power capacitors	T1,T2	Chalk and Talk

37.	IV	Shunt and series capacitors, effect of shunt capacitors (Fixed and switched), effect of series capacitors	T1,T2	Chalk and Talk
38.		Difference between shunt and series capacitors	T1,T2	Chalk and Talk
39.		Calculation of Power factor correction, capacitor allocation, Numericals	T1,T2	Chalk and Talk
40.		Economic justification of capacitors - Procedure to determine the best capacitor location.	T1,T2	Chalk and Talk
41.		Revision	T1,T2	Chalk and Talk/ Quiz
42.	V	Voltage Control: Importance of voltage control, methods of voltage control	T1,T3	Chalk and Talk
43.		Equipment for voltage control, effect of shunt capacitors	T1,T3	Chalk and Talk
44.		Effect of series capacitors	T1,T3	Chalk and Talk
45.		Effect of AVB/AVR on voltage control	T1,T3	Chalk and Talk
46.		Numerical problems	T1,T3	Chalk and Talk
47.		Line drop compensation	T1,T3	Chalk and Talk
48.		Voltage fluctuations	T1,T3	Chalk and Talk
49.		Numerical problems	T1,T3	Chalk and Talk

TEXT BOOKS:

1. Antennas and Wave Propagation – J.D. Kraus, R.J. Marhefka and Ahmad S. Khan, TMH, New Delhi, 4th ed., (Special Indian Edition), 2010.
2. Electromagnetic Waves and Radiating Systems – E.C. Jordan and K.G. Balmain, PHI, 2nd ed.,2000.

REFERENCE BOOKS:

1. Antenna Theory - C.A. Balanis, John Wiley & Sons, 3rd Ed., 2005.
2. Antennas and Wave Propagation – K.D. Prasad, Satya Prakashan, Tech India Publications,New Delhi, 2001.
3. Radio Engineering Handbook- Keith henney, 3rd edition TMH.
4. Antenna Engineering Handbook –John Leonidas Volakis, 3rd edition, 2007

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