

GOVERNMENT POLYTECHNIC, NAYAGARH

LESSON PLAN

DEPARTMENT OF ELECTRICAL ENGINEERING

SUBJECT CODE:	TH2
NAME:	EPTD
BRANCH:	Electrical Engineering.
SEMESTER:	4th SEM
PERIODS PER WEEK:	3
NAME OF THE FACULTY:	SRI HRUDANANDA NAYAK
DESIGNATION:	LECTURER ELECTRICAL ENGG. (STG.-II)

Week	Class	Topic
Week 1	Class 1	Single line diagrams with components of the electric supply transmission and distribution systems
	Class 2	Classification of transmission lines
	Class 3	Primary and secondary transmission
Week 2	Class 1	Standard voltage level used in India
	Class 2	Classification of transmission lines: based on type of voltage, voltage level, length and others
	Class 3	Characteristics of high voltage for power transmission
Week 3	Class 1	Method of construction of electric supply transmission system- 110 kV, 220 kV, 400 kV
	Class 2	Method of construction of electric supply distribution systems- 220 V, 400V, 11 kV, 33 kV
	Class 3	Line Parameters: Concepts of R, L and C of line parameters and types of lines
Week 4	Class 1	Performance of short line: Efficiency, regulation and its derivation
	Class 2	Effect of power factor, vector diagram for different power factor
	Class 3	Performance of medium line: representation, nominal 'T', nominal ' π ' and end condenser methods
Week 5	Class 1	Transposition of conductors and its necessity
	Class 2	Skin effect and proximity effect
	Class 3	Extra High Voltage AC (EHVAC) transmission line: Necessity, high voltage substation components
Week 6	Class 1	Advantages, limitations and applications of EHVAC
	Class 2	EHVAC lines in India
	Class 3	Ferranti and Corona effect

Week 7	Class 1	High Voltage DC (HVDC) Transmission Line: Necessity, components, advantages, limitations and applications
	Class 2	Layout of monopolar, bi-Polar and homo-polar transmission lines of HVDC
	Class 3	HVDC Lines in India
Week 8	Class 1	Features of EHVAC and HVDC transmission line
	Class 2	Flexible AC Transmission line: Features, types of FACTS controller
	Class 3	New trends in wireless transmission of electrical power
Week 9	Class 1	AC distribution: Components classification, requirements of an ideal distribution system
	Class 2	Primary and secondary distribution system
	Class 3	Feeder and distributor, factors to be considered in design of feeder and distributor
Week 10	Class 1	Types of different distribution schemes: radial, ring, and grid, layout, advantages, disadvantages and applications
	Class 2	Voltage drop, sending end and receiving end voltage
	Class 3	Distribution Sub-Station: Classification, site selection, advantages, disadvantages and applications
Week 11	Class 1	Single Line diagram (layout) of 33/11KV Sub-Station, 11KV/400V sub-station
	Class 2	Symbols and functions of their components
	Class 3	Overhead Conductors: Properties of material, types of conductor with trade names, significance of sag
Week 12	Class 1	Line supports: Requirements, types of line structures and their specifications, methods of erection
	Class 2	Line Insulators: Properties of insulating material, Selection of material
	Class 3	Types of insulators and their applications
Week 13	Class 1	Causes of insulator failure
	Class 2	Derivation of equation of string efficiency for string of three suspension insulator
	Class 3	Methods of improving string efficiency
Week 14	Class 1	Underground Cables: Requirements, classification, construction
	Class 2	Comparison with overhead lines
	Class 3	Cable laying and cable jointing
Week 15	Class 1	Revision / Practice / Discussion
	Class 2	Revision / Practice / Discussion
	Class 3	Revision / Practice / Discussion