

## LESSON PALN 2024(SUMMER)

Discipline: Electrical Engg.		Semester:6th Sem	Name of the Teaching Faculty: Mrs. Jayashree Mohanty, Sr. Lect. Electrical Engg
Subject: ELECTRICAL INSTALLATION AND ESTIMATING		Theory periods: 5P/Week	Semester From Date:-16.01.24 to Date:-23.04.24 No. of Weeks:15
1st Week	16.01.24	1 <sup>st</sup>	INDIAN ELECTRICITY RULES: Definitions, Ampere, Apparatus, Accessible, Bare, cable, circuit, circuit breaker, conductor voltage (low, medium, high, EH), live, dead, cut-out.
	19.01.24	2 <sup>nd</sup>	conduit, system, danger, Installation, earthing system, span, volt, switch gear, etc.
	20.01.24	3 <sup>rd</sup>	General safety precautions, rule 29, 30, 31, 32, 33, 34, 35, 36, 40, 41, 43, 44, 45, 46.
2nd Week	22.01.24	1 <sup>st</sup>	General conditions relating to supply and use of energy: rule 47, 48, 49, 50, 51, 54, 55, 56, 57, 58, and 59.
3rd Week	29.01.24	1 <sup>st</sup>	Rule 60, 61, 62, 63, 64, 65, 66, 67, 68, 70.
	30.01.24	2 <sup>nd</sup>	OH lines: Rule 74, 75, 76, 77, 78, 79, 80, 86, 87, 88, 89, 90, 91.
	02.02.24	3 <sup>rd</sup>	ELECTRICAL INSTALLATIONS: Electrical installations, domestics, industrial, Wiring System, Internal distribution of Electrical Energy. Methods of wiring.
	03.02.24	4 <sup>th</sup>	Systems of wiring.
4th Week	05.02.24	1 <sup>st</sup>	Wire and cable, conductor materials used in cables, insulating materials mechanical protection.
	06.02.24	2 <sup>nd</sup>	Wire and cable, conductor materials used in cables, insulating materials mechanical protection.
	09.02.24	3 <sup>rd</sup>	Types of cables used in internal wiring, multi-stranded cables, voltage grinding of cables, general specifications of cables.
	10.02.24	4 <sup>th</sup>	CLASS TEST-1
5th Week	12.02.24	1 <sup>st</sup>	Main switch and distribution boards, conduits, conduit accessories and fittings, lighting accessories and fittings.
	13.02.24	2 <sup>nd</sup>	Fuses, important definitions, determination of size of fuse – wire, fuse units.
	16.02.24	3 <sup>rd</sup>	Earthing conductor, earthing, IS specifications regarding earthing of electrical installations, points to be earthed.
	17.02.24	4 <sup>th</sup>	Determination of size of earth wire and earth plate for domestic and industrial installations. Material required for GI pipe earthing.
6th Week	19.02.24	1 <sup>st</sup>	Aspects of good lighting services. Types of lighting schemes.
	20.02.24	2 <sup>nd</sup>	Design of lighting schemes, factory lighting.
	23.02.24	3 <sup>rd</sup>	Public lighting installations, street lighting.
	24.02.24	4 <sup>th</sup>	General rules for wiring, determination of number of points (light, fan, socket, outlets), determination of total load, determination of Number of sub-circuits.

7th Week	26.02.24	1 <sup>st</sup>	INTERNAL WIRING: Type of internal wiring, cleat wiring, CTS wiring, wooden casing capping, metal sheathed wiring, conduit wiring, their advantage and disadvantages comparison and applications.
	27.02.24	2 <sup>nd</sup>	Prepare one estimate of materials required for CTS wiring for small domestic installation of one room and one verandah within 25 m2 with given light, fan & plug points. Calculation of current, circuit diagram. Calculation of phase wire, Calculation of Neutral wire and quantity of material required.
	01.03.24	3 <sup>rd</sup>	Prepare one estimate of materials required for conduit wiring for small domestic installation of one room and one verandha within 25 m2 with given light, fan & plug points. Calculation of current, circuit diagram, Calculation of phase wire.
	02.03.24	4 <sup>th</sup>	Calculation of Neutral wire and quantity of material required.
8th Week	04.03.24	1 <sup>st</sup>	Prepare one estimate of materials required for concealed wiring for domestic installation of two rooms and one latrine, bath, kitchen & verandah within 80m2 with given light, fan & plug points. Calculation of current, circuit diagram, Calculation of phase wire,
	09.03.24	2 <sup>nd</sup>	Calculation of Neutral wire and quantity of material required.
9th Week	11.03.24	1 <sup>st</sup>	Prepare one estimate of materials required for erection of conduct wiring to a small workshop installation about 30m2 and load within 10 KW. Calculation of current, circuit diagram, Calculation of phase wire.
	12.03.24	2 <sup>nd</sup>	Calculation of Neutral and earth wire and specifications of quantity of material required.
	15.03.24	3 <sup>rd</sup>	Main components of overhead lines, line supports, factors Governing Height of pole, conductor materials, determination of size of conductor for overhead transmission line, Cross arms, pole brackets and clamps, guys and stays, conductors configurations, spacing and clearances, span lengths, overhead line insulators, types of insulators.
	16.03.24	4 <sup>th</sup>	Lighting arresters, danger plates, anti-climbing devices, bird guards, beads of jumpers, jumpers, tee-offs, guarding of overhead lines.
10th Week	18.03.24	1 <sup>st</sup>	Prepare an estimate of materials required for LT distribution line within load of 100 KW maximum and standard spans involving calculation of the size of conductor (from conductor chart), current carrying capacity and voltage regulation consideration using ACSR, Specifications of quantity of material required.
	19.03.24	2 <sup>nd</sup>	Prepare an estimate of materials required for LT distribution line within load of 100 KW maximum and standard spans involving calculation of the size of conductor (from conductor chart), current carrying capacity and voltage regulation consideration using ACSR.
	22.03.24	3 <sup>rd</sup>	Overhead transmission line diagram, specifications of quantity of material required.
	23.03.24	4 <sup>th</sup>	Prepare an estimate of materials required for HT distribution line (11 KV) within 2 km and load of 2000 KVA maximum and standard spans involving calculation of the size of conductor (from conductor chart), current carrying capacity and voltage regulation of the size of conductor (from conductor chart), current carrying capacity and voltage regulation consider action using ACSR, Overhead transmission line diagram, specifications of quantity of material required.

11th Week	30.03.24	1 <sup>st</sup>	OVER HEAD SERVICE LINES: Components of service lines, service line (cables and conductors), bearer wire, lacing rod. Ariel fuse, service support, energy box and meters etc.
12th Week	02.04.24	1 <sup>st</sup>	Prepare and estimate for providing single phase supply of load of 5 KW (light, fan, socket) to a single stored residential building. Service line diagram, Calculation of current, main switch etc.
	05.04.24	2 <sup>nd</sup>	Specifications of quantity of material required.
	06.04.24	3 <sup>rd</sup>	Prepare and estimate for providing single phase supply load of 3KW to each floor of a double stored building having separate energy meter. Service line diagram. Calculation of current, main switch etc.
13th Week	08.04.24	1 <sup>st</sup>	Specifications of quantity of material required.
	09.04.24	2 <sup>nd</sup>	Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using insulated wire. Calculation of current, main switch etc.
	12.04.24	3 <sup>rd</sup>	Specifications of quantity of material required.
	13.04.24	4 <sup>th</sup>	QUIZ
14th Week	15.04.24	1 <sup>st</sup>	Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using bare conductor and insulated wire combined. Calculation of current, main switch etc.
	16.04.24	2 <sup>nd</sup>	ESTIMATING FOR DISTRIBUTION SUBSTATIONS: Prepare one materials estimate for following types of transformer substations, Pole mounted substation introduction.
	19.04.24	3 <sup>rd</sup>	Diagram, calculation and specifications of quantity of material required.
	20.04.24	4 <sup>th</sup>	Plinth Mounted substation. Introduction,Diagram, calculation and specifications of quantity of material required.
15th Week	22.04.24	1 <sup>st</sup>	Tutorial
	23.04.24	2 <sup>nd</sup>	Tutorial