

LESSON PLAN OF ELECTRICAL INSTALLATION & ESTIMATING

Discipline:- Electrical	Semester:- 6th	Name Of The Teaching Faculty:- MANMOHAN PANDA
Subject:- Electrical Installation & Estimating	No Of Days Per week Class Allotted:-5	No Of Weeks:-12 SESSION- 2025-2026 SUMMER FROM 22.12.2025 TO 18.04.2026
No. of week	No. of class	Topic to be taught
1st	1	INDIAN ELECTRICITY RULES Definitions, Ampere, Apparatus, Accessible, Bare, cable, circuit, circuit breaker, conductor voltage (low, medium, high, EH), live, dead, cutout, conduit, system, danger, Installation, earthing system, span. volt. switch gear, etc
	2	General safety precautions, rule 29, 30, 31, 32, 33, 34, 35, 36, 40, 41, 43, 44, 45, 46
	3	General conditions relating to supply and use of energy : rule 47, 48, 49, 50, 51, 54, 55, 56, 57, 58, 59, 60
	4	General conditions relating to supply and use of energy : Rule 61, 62, 63, 64, 65, 66, 67, 68, 70
	5	OH lines : Rule 74, 75, 76, 77, 78, 79, 80
2nd	6	OH lines : Rule 86, 87, 88, 89, 90, 91
	7	ELECTRICAL INSTALLATIONS Electrical installations, domestics, industrial, Wiring System, Internal distribution of Electrical Energy
	8	Methods of wiring, systems of wiring Wire and cable
	9	Conductor materials used in cables, insulating materials mechanical protection
	10	Types of cables used in internal wiring, multi-stranded cables, voltage grinding of cables, general specifications of cables
3rd	11	ACCESSORIES: Main switch and distribution boards, conduits, conduit accessories and fittings, lighting accessories and fittings, fuses
	12	Important definitions, determination of size of fuse – wire, fuse units
	13	Earthing conductor, earthing, IS specifications
4th		regarding earthing of electrical installations, points to be earthed
	14	Determination of size of earth wire and earth plate for domestic and industrial installations. Material required for GI pipe earthing
	15	LIGHTING SCHEME: Aspects of good lighting services. Types of lighting schemes, design of lighting schemes, factory lighting, public lighting installations
4th	16	Street lighting, general rules for wiring
	17	Determination of number of points (light, fan, socket, outlets)
	18	Determination of total load, determination of Number of sub- Circuits

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	19	INTERNAL WIRING: Type of internal wiring, cleat wiring, CTS wiring, wooden casing capping, metal sheathed wiring, conduit wiring
	20	Advantage and disadvantages comparison and applications
5th	21	Prepare one estimate of materials required for CTS wiring for small domestic installation of one room and one verandah within 25 m ² with given light, fan & plug points
	22	Prepare one estimate of materials required for CTS wiring for small domestic installation of one room and one verandah within 25 m ² with given light, fan & plug points
	23	Prepare one estimate of materials required for CTS wiring for small domestic installation of one room and one verandah within 25 m ² with given light, fan & plug points
	24	Prepare one estimate of materials required for conduit wiring for small domestic installation of one room and one verandah within 25 m ² with given light, fan & plug points
	25	Prepare one estimate of materials required for conduit
		wiring for small domestic installation of one room and one verandah within 25 m ² with given light, fan & plug points
6th	26	Prepare one estimate of materials required for concealed wiring for domestic installation of two rooms and one latrine, bath, kitchen & verandah within 80m ² with given light, fan & plug points
	27	Prepare one estimate of materials required for concealed wiring for domestic installation of two rooms and one latrine, bath, kitchen & verandah within 80m ² with given light, fan & plug points
	28	Prepare one estimate of materials required for concealed wiring for domestic installation of two rooms and one latrine, bath, kitchen & verandah within 80m ² with given light, fan & plug points
	29	Prepare one estimate of materials required for erection of conduct wiring to a small workshop installation about 30m ² and load within 10 KW
	30	Prepare one estimate of materials required for erection of conduct wiring to a small workshop installation about 30m ² and load within 10 KW
7th	31	OVER HEAD INSTALLATION: Main components of overhead lines, line supports
	32	Factors Governing Height of pole, conductor materials, determination of size of conductor for overhead transmission line, cross arms, pole brackets and clumps
	33	Guys and stays, conductors configurations, spacing and clearances
	34	Span lengths, overhead line insulators, types of insulators, lighting arresters, danger plates
	35	Anti-climbing devices, bird guards, beads of jumpers, jumpers, tee-offs, guarding of overhead lines
8th	36	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

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		capacity and voltage regulation consideration using ACSR
	37	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
	38	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
	39	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
	40	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
9th	41	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
	42	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
	43	OVER HEAD SERVICE LINE: Components of service lines, service line (cables and conductors), bearer wire, lacing rod, Ariel fuse, service support, energy box and meters
	44	Prepare and estimate for providing single phase supply of load of 5 KW (light, fan, socket) to a single stored residential building
	45	Prepare and estimate for providing single phase supply of load of 5 KW (light, fan, socket) to a single stored residential building
10 th	46	Prepare and estimate for providing single phase supply load of 3KW to each floor of a double stored building having separate energy meter
	47	Prepare and estimate for providing single phase supply load of 3KW to each floor of a double stored building having separate energy meter
	48	Prepare and estimate for providing single phase supply load of 3KW to each floor of a double stored building having separate energy meter
	49	Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using insulated wire.
	50	Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using insulated wire.

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11 th	51	Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using insulated wire.
	52	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
	53	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
	54	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
	55	ESTIMATING FOR DISTRIBUTION SUBSTATIONS: Prepare one materials estimate for Pole mounted substation
12 th	56	Prepare one materials estimate for Pole mounted substation
	57	Prepare one materials estimate for Pole mounted substation
	58	Prepare one materials estimate for Plinth Mounted substation
	59	Prepare one materials estimate for Plinth Mounted substation
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21/12/2025

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