

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN Session-2023-2024

Discipline: Electrical Engg. Semester: 6th

Subject: Electrical Installation & Estimating

Name of the Teaching Faculty: Durga prasad Biswas

Subject: Electrical Installation and Estimating No. of Days/per week class allotted : 5

Semester From Date : 16-01-2024 To Date : 26-04-2024

No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
1	1	IE Rules, Derivation - Ampere, Apparatus, Accessible, Bare, Dead, Cable, Circuit, CB, Conductor voltage (LV, MV, HV)
	2	Cut-out, Conduit, System, danger, Installation, Earthing, Earthing system, span, Resistance, Volt, Switch-gear, switch, live
	3	General safety precaution Rule - 29, 30, 31, 32, 33, 34, 35, 36, 40, 41, 43, 44, 45, 46
	4	General condition relating to supply and use of energy Rule - 47, 48, 49, 50, 51, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 70
	5.	Tutorial class
2	6	Electrical Installation, domestic & industrial wiring system, Internal distribution of electrical energy, methods of wiring
	7	Types of cables used in internal house wiring, multi stranded cable, voltage grading of cable
	8	System of wiring, wire and cable, conductor material used in cable, Insulating material used in cable, cable classification
	9	Specification of cables, Electrical Accessories - MS, DB, Lighting accessories and fittings
	10	Tutorial class
3	11	Fuses, Important derivation, determination of size of fuse wire, fuse unit
	12	Earthing of Electrical Installation, Earthing conductor material required in pipe earthing


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	13	Determination of size of earth wire, earth plate for domestic installation and Industrial installation
	14	Plate earthing, material required for plate earthing
	15	Tutorial class
4	16	Lighting scheme - Aspects of good lighting scheme, Types of lighting scheme, design of lighting scheme
	17	Factory lighting
	18	Public lighting, street lighting
	19	General Rules for lighting in building, determinations of no. of points, total loads, circuit, sub-circuit
	20	Tutorial class
5	21	Types of internal wiring, cleat wiring, advantage and disadvantages, application
	22	CTS wiring, advantage, disadvantage and application
	23	Standard practice for house wiring
	24	Prepare one estimate of material required for CTS wiring for small domestic installation of one room, one verandah with in 25m ² with given light, fan & plug points.


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	25	The above previous problem continues
6	26	Tutorial class
	27	Metal Sheathed wiring, advantage, disadvantage Application
	28	Conduit wiring, conduit accessories and fittings, Types of conduit wiring, advantage & disadvantages
	29	prepare one estimate of material required for conduit wiring for small domestic installation of one room, one verandah with in $25m^2$ with given light, fan and plug points
	30	The above problem continues
7	31	Tutorial class
	32	prepare one estimate of material required for concealed conduit wiring for small domestic installation of two rooms, one latrine, bath room, kitchens and verandah with $50m^2$,
	33	The above problem continues
	34	Wooden casing - capping wiring system, advantage, disadvantage and application.
	35	Tutorial class
8	36	problem discussion on casing - capping wiring system.


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Week	Class Day	Theory /Practical Topics
	37	power cut wiring
	38	Standard practice for power cut
	39	prepare one estimate of material required for erection of conduct wiring to a small work shop installation of 30m ² and load with in 10 kW
	40.	Tutorial class
9	41.	OH line rules - 74, 75, 77, 76, 78, 79, 80, 86, 87, 88, 89, 90, 91
	42	Main components of overhead lines, lines supports, factor affecting the height of pole, conductor material
	43	Types of conductor, cross-arms, pole brackets, clamps, guys and stays.
	44	Conductor specification, spacing and clearance, span, overhead line insulator
	45	Tutorial class
10	46	Lighting arrestors, its type and working
	47	Different types of joints in cables.
	48	Danger plate, anti climbing devices, boards guards, beds of jumper, tie-off, guarding of overhead lines


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Week	Class Day	Theory / Practical Topics
	49	Standard practice
	50	Tutorial class CLASS
11	51	Prepare one estimate of material required for LT distribution line with load of 10 kW maximum and standard span involving.
	52.	The above problem continues.
	53.	prepare one estimate of material required for HT distribution on line 11KV with span 2km and load of 200kVA maximum and standard span considering.
	54	The above problem continues.
	55	Tutorial class
12	56	Components of service lines, bearer wire, lacing rods, arret fuse, service support, U-Clamp
	57	Standard practice
	58.	prepare one estimate of material required for providing 1 ϕ supply of 5 kW to a single storey residential building.
	59	problem of 1 ϕ service connection.
	60.	Tutorial class


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Week	Class Day	Theory /Practical Topics
13	61	Problems of double store service connection
	62	Prepare one estimate of material required for service connection to a factory building with load with 15kW using insulated wire.
	63	prepare one estimate of material required for providing 1 ϕ supply of load of 3kW to each floor of double store building.
	64	Standard practice for 3 ϕ connection.
	65.	Tutorial class
14	66	prepare one estimate of material required for service connection to a factory building with 15kW - load with bare conductor.
	67	The above problem continues.
	68.	Problems of service line connection of factory.
	69	service line connection of farmer.
	70.	Tutorial class
15	71	Substation, classification of sub-station, selection and location of sub-station.
	72.	Equipments required for substation.


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Week	Class Day	Theory /Practical Topics
	73	prepare one estimate of material required for pole mounted sub-station.
	74	prepare one estimate of material required for plinth mounted substation.
	75	Tutorial class


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