

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN Session-2022-2023

Discipline: Electrical Engg. Semester: 6th

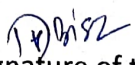
Name of the Teaching Faculty: Durga Prasad Biswal

Sub- Electrical Installation and Estimating

Subject: Electrical Installation and Estimating No. of Days/per week class allotted 4

Semester From Date: 14-02-2023 To Date: 23-05-2023 No. of Weeks: 15

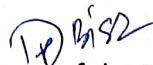
Week	Class Day	Theory /Practical Topics
1	1	IE Rules (1956), Definition - Ampere, Apparatus, Accessible, Bare, Cable, Circuit, Circuit Breaker, Conductor voltage
	2	Cut-out, Conduit, System, danger, Installation, Earthing Earthing system, Span, Volt, voltage, switch gear, ^{switch,} live & dead
	3	General 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 & Tutorial class
2	5	Electrical Installation, domestic & Industrial wiring system, Internal distribution of electrical energy, methods of wiring
	6	System of wiring, wire and cable, Conductor material used in cable, Insulating material used in cable
	7	Types of cables used in internal house wiring, multi-stranded cable, voltage grading of cable
3	8	Specification of cables, Electrical Accessories - M.S., DB, lighting accessories and fitting, Tutorial class
	9	Fuses, Important definition, determination of size of fuse wire, fuse unit, Classification of fuse
	10	Earthing of Electrical Installation, Earthing conductor, Types of earthing, material required for plate earthing
	11	Determination of size of earth wire, earth plate for domestic and Industrial Installation.
	12	Pipe earthing, material required for pipe earthing & Tutorial class


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Week	Class Day	Theory /Practical Topics
4	13	Lighting scheme - Aspects of good lighting services, Types of lighting, design of lighting scheme
	14	Factory lighting, Public lighting
	15	Street lighting
	16	General rules for lighting in building i.e wiring, determination of no. of points, determination of total loads, determination of sub-circuit, Tutorial class
5	17	Types of internal wiring, cleat wiring, advantage, disadvantage, application
	18	CTS wiring, advantage, disadvantage and application Standard practice for house wiring
	19	Prepare one estimate of material required for CTS wiring for small domestic installation of one room, one verandah within 25m ² with given light, fan and plug points
	20	Tutorial class
6	21	CTS wiring of larger building
	22	Metal sheathed wiring, advantage, disadvantage application
	23	Conduit accessories, fitting, Conduit wiring, advantage, disadvantage and application.
	24	Prepare one estimate of material required for conduit wiring for small domestic installation of one room, one verandah within 25m ² with given light, fan and plug points.


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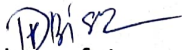
Week	Class Day	Theory /Practical Topics
7	25	Tutorial class
	26	Prepare one estimate of material required for Concealed Conduit wiring for small domestic installation of two rooms, one latrine, bath room, kitchen and verandah with 80 m ² with given light, fan and plug points
	27	The above problem continues
	28	Wooden casing - capping wiring system, advantage disadvantage and application, Tutorial class
8	29	Problems - casing - capping wiring system
	30	Power circuit wiring
	31	Standard practice for power circuit
	32	Prepare one estimate of material required for erection of Conduit wiring to a small workshop installation about 30 m ² and load within 10KW.
9	33	OH line rule - 74, 75, 76, 77, 78, 79, 80, 86, 87, 88, 89, 90, 91
	34	main components of overhead lines, line supports, factors affecting the height of poles, conductor material


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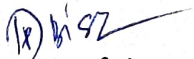
Week	Class Day	Theory /Practical Topics
	35	Determination of size of conductor for OH Transmission line, Cross-arms, pole bracket, guys and stays
	36	Conductor specification, spacing and clearance, span length and Tutorial class
10	37	Insulator of overhead line
	38	LA
	39	Danger plate, Anti climbing devices, bird-Guards, beds of jumper, Tee-off, guardings of overhead lines.
	40.	Standard practice and Tutorial class
11	41	Prepare one estimate of material required for LT distribution line with load of 100kW maximum and
		Standard span involving. Calculate the size of conductor, current carrying capacity, voltage regulation using ACSR conductor.
	42.	Problems of LT distribution line.
	43	Prepare one estimate of material required for HT distribution line 11kV within 2km and load of 2000kVA
		maximum and Standard span involving. Calculate the size of conductor, current carrying capacity
		and voltage regulation consider action using ACSR conductor.


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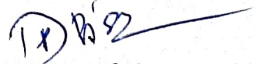
Week	Class Day	Theory /Practical Topics
	44	Tutorial class
12	45	Components of service line, service line, bearer wire, lacing rod, arrel fuse, service support, energy meter
	46	Stand ard practice
	47	prepare one estimate of material required for providing 14 supply of 5kW to a single stored residential building
	48	Problem Discussion & Tutorial class
13	49	prepare one estimate of material required for providing 14 supply of load of 3kW to each floor of double stored building having separate energy meter.
	50	Problem discussion on double stored building
	51	prepare one estimate of material required for service to a factory building with load of 15kW using insulated wire.
	52	34 service connection and Tutorial class
14	53	prepare one estimate of material required for service connection to a factory building with 15kW using bare conductor and insulated wire combined.


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Week	Class Day	Theory / Practical Topics
	54	3 ϕ Service Connection of factory
	55	3 ϕ service line connection of farmer
	56	Tutorial class
15	57	Substation, classification of sub-station, selection and location of sub-station.
	58	Equipments of substations.
	59	Prepare one estimate of material for pole mounted substation.
	60	Prepare one estimate of material for plenty mounted substation, Tutorial class


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