

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN Session-2024-2025

Semester: 6th Discipline: Electrical Engg.

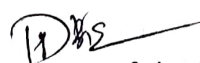
Subject: Electrical Installation and Estimating

Name of the Teaching Faculty: Durga prasad Biswal

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

Semester From Date: 4-02-2025 To Date: 17-05-2025 No. of Weeks: 15


Week	Class Day	Theory /Practical Topics
1	1	IE Rules (1956), Definition - Ampere, Apparatus, Accessible Bare, cable, Circuit, Circuit Breaker, Conduit,
	2	Cut-out, Conduit system, Danger, Installation, Earthing Earthing system, Ohm, Span, Voltage, Switchgear, Switch
	3	General Safety Precaution Rule - 29, 30, 31, 32, 33, 34 35, 36, 40, 41, 43, 44, 45, 46, 47
	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
2	5	Electrical Installation, Domestic and industrial wiring system, Internal distribution of electrical energy, methods of wiring, system of wiring
	6	Wire and cable, Conductor materials used in cable Insulating material used in cables, protective - covering
	7	Types of cables used in internal house wiring, multi-stranded cable, Advantage of multi-stranded cable
	8	Voltage grading of cable, specification of cables, Electrical Accessories and fitting, Main switch, DB
3	9	Fuses, Important definition, determination of size fuse wire, fuse unit, classification of fuse.
	10	Earthing conductor, earthing, IS specification regarding earthing, points to be earthed, types of earthing
	11	Earth plate for domestic and Industrial installation, determination of size of earth wire, material required for plate earthing.
	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 schemes
	14	Factory lighting, public lighting installation
	15	Street lighting
	16	General rules for wiring, determination of no. of points, determination of total load, determination of sub-ckt.
5	17	Types of internal wiring, cleat wiring, advantage & disadvantages, 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 25 m ² with given light, fan and plug points
	20	Tutorial class
6	21	CTS wiring for larger buildings.
	22	Metal sheathed wiring, advantage, disadvantage, its application.
	23	Wooden casing capping wiring, advantage, disadvantage & application.
	24	casing capping wiring for small domestic installation


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Week	Class Day	Theory /Practical Topics
7	25	Conduit accessories, & it's fitting, Conduit wiring (surface and concealed), advantage, disadvantage, application.
	26	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.
	27	prepare one estimate of material required for concealed Conduit wiring for small domestic installation of two rooms, one latrine bath room and kitchen, verandah within 80 $80m^2$ with given light, fan and plug points.
	28.	Conduit wiring for larger buildings.
8	29	Tutorial class
	30	power circuit wiring
	31	Standard practice for power circuit
	32	prepare one estimate of material required for Small work-shop installation about $30m^2$ and load with in $10kW$
9	33	power circuit installation for $35kW$
	34	OH line rules - 74, 75, 76, 77, 78, 79, 80, 86, 87, 88, 89, 90, 91
	35	Main components of overhead lines, line supports, poles, conductor material
	36	Conductor specification, spacing and clearance, span, determination of site of conductor for OH lines, cross arms, pole brackets


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10	37.	Insulator of service lines.
	38	Cross-arms, pole brackets, guys and stays, LA
	39	Danger plate, anti climbing devices, bird-guards, Jumper, Tee-off, Guarding of overhead lines.
	40	Stand practice for OH line installation
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	Installation of 1km LT distribution line.
	43.	prepare one estimate of material required for HT distribution line 11kV within 2km and load of 200kVA maximum and stand span involving. Calculate the size of conductor, current carrying capacity and voltage regulation Consider action using ACSR conductor.
	44.	Prepare One estimate of material for HT line of 3km.
12	45	Components of service line, service line, bearer-wire, lacing rod, arret fuse, service support, energy meter.
	46	Standard practice for 1 ϕ service line


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Week	Class Day	Theory/Practical Topics
	47	prepare one estimate of material required for providing 1 ϕ supply of 5kW to a single store residential building.
	48	prepare one estimate of material for a building which consists of 3kW load and present 20m from pole.
13	49	prepare one estimate of material required for providing 1 ϕ supply of load of 3kW to each floor of double store building having separate energy meter.
	50	prepare one estimate of material required for service to a factory building with load of 15kW using insulated wire.
	51.	Three phase service connection.
	52.	Standard practice for 3 ϕ service connection.
14	53.	prepare one estimate of material required for service connection to a factory building with 15kW using bare conductor and insulated wire combined.
	54	3 ϕ service connection to a factory
	55	3 ϕ service connection to a farmer.
	56	Tutorial class
15	57	Sub-station, Classification of sub-station.
	58	Selection and location of substation, Equipments of substation


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