

LESSON PLAN

SUB:- ELECTRICAL INSTALLATION & ESTIMATING.

BRANCH:- ELECTRICAL ENGG.

SEMESTER: 6TH

NAME OF FACULTY: - ASHWINI KUMAR SAHU



**GOVERNMENT POLYTECHNIC,
BHADRAK
SESSION:2025-26**

HOD Electrical

HOD (ELECT.)
G.P.BHADRAK

Academic Co-ordinator

Academic Co-ordinator

Principal
Govt. Polytechnic Bhadrak

Principal
Govt. Polytechnic
Bhadrak

ELECTRICAL		6TH	ASHWINI KUMAR SAHU(Sr.Lect. in Elect.Engg.)
SUBJECT: ELECTRICAL INSTALLATION & ESTIMATING		NO. OF DAYS/PER WEEK CLASS ALLOTTED - 75/5	SEMESTER FROM DATE 22.12.2025 - 18.04.2026 No of Weeks:15
WEEK	CLASS DAY	THEORY TOPICS	
1ST	1	Definitions, Ampere, Apparatus, Accessible, Bare, cable, circuit, circuit breaker, conductor voltage (low, medium, high, EH), live, dead, cut-out, 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	
	4	General conditions relating to supply and use of energy : rule 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 70	
	5	TUTORIAL CLASS	
2ND	6	OH lines : Rule 74, 75, 76, 77, 78,	
	7	OH lines : Rule 79, 80, 86, 87, 88, 89, 90, 91	
	8	Electrical installations, domestics, industrial, Wiring System.	
	9	Internal distribution of Electrical Energy. Methods of wiring, systems of wiring.	
	10	TUTORIAL CLASS	
3RD	11	Wire and cable, conductor materials used in cables, insulating materials mechanical protection..	
	12	Types of cables used in internal wiring, multi-stranded cables, voltage grinding of cables, general specifications of cables	
	13	Main switch and distribution boards, conduits, conduit accessories and fittings, lighting accessories and fittings	
	14	fuses, important definitions, determination of size of fuse - wire, fuse units. Earthing conductor.	
	15	TUTORIAL CLASS	
4TH	16	Earthing, IS specifications regarding earthing of electrical installations, points to be earthed.	
	17	Determination of size of earth wire and earth plate for domestic and industrial installations. Material required for GI pipe earthing.	
	18	Aspects of good lighting services. Types of lighting schemes.	
	19	Design of lighting schemes, factory lighting, public lighting installations, street lighting.	
	20	TUTORIAL CLASS	
5TH	21	General rules for wiring, determination of number of points (light, fan, socket, outlets)	
	22	determination of total load, determination of Number of subcircuits	
	23	Type of internal wiring, cleat wiring, CTS wiring, wooden casing capping, metal sheathed wiring.	

	24	Conduit wiring, their advantage and disadvantages comparison and applications.
	25	TUTORIAL CLASS
6TH	26	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.
	27	Solves different types of problem.
	28	Solves different types of problem.
	29	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.
	30	Solves different types of problem.
7TH	31	Solves different types of problem.
	32	Solves different types of problem.
	33	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.
	34	Solves various types of problem.
	35	Solves various types of problem.
8TH	36	Prepare one estimate of materials required for erection of conduct wiring to a small workshop installation about 30m ² and load within 10 KW
	37	Solves various types of problem
	38	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, lightning arresters, danger plates, anti-climbing devices, bird guards, beads of jumpers, jumper tee-offs, guarding of overhead lines.
	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	Solves different types of problem.
	41	Solves different types of problem.
9TH	42	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.
	43	Solves various types of problem.
	44	Solves various types of problem.
	45	Solves various types of problem.

10TH	46	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
	47	Solves various types of problem.
	48	Solves various types of problem.
	49	Solves various types of problem.
	50	Solves various types of problem.
11TH	51	Components of service lines, service line (cables and conductors), bearer wire, lacing rod. Ariel fuse, service support, energy box and meters etc.
	52	Prepare and estimate for providing single phase supply of load of 5 KW (light, fan, socket) to a single stored residential building.
	53	Solves various types of problem.
	54	Prepare and estimate for providing single phase supply load of 3KW to each floor of a double stored building having separate energy meter
	55	Solves various types of problem.
12TH	56	Solves various types of problem.
	57	Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using insulated wire.
	58	Solves various types of problem.
	59	Solves various types of problem.
	60	Solves various types of problem.
13TH	61	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.
	62	Solves various types of problem
	63	Solves various types of problem
	64	Prepare one materials estimate for following types of transformer substations. Pole mounted substation.
	65	Solves various types of problem on Pole mounted substation
14TH	66	Solves various types of problem on Pole mounted substation
	67	Prepare one materials estimate for Plinth Mounted substation
	68	Solves various types of problem on Plinth mounted substation
	69	Solves various types of problem on Plinth mounted substation
	70	Solves various types of problem

15TH

71	Solves various types of problem
72	Solves various types of problem
73	Solves various types of problem
74	Solves various types of problem
75	Solves various types of problem

Ashwini
Signature of the Faculty

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