Lesson Plan

	Discipline:Electrical Engineering	**Semester-6th SUMMER 2023.SEC-B**	**Name of the Teachng Faculty:HRUSIKESH NAYAK**
Sl. No.	**Subject ELECTRICAL INSTALLATION AND ESTIMATING**	**No. Of Days/Week class alloted:05**	**Semester From date: 14.02.2023 to date: 23.05.2023. No of weeks: 15**
	Weeks/Months	**Class Day**	**Topic**
1	1st Week	1st (14.02.2023)	1.1 Definitions, Ampere, Apparatus, Accessible, Bare, cable, circuit, circuit breaker, conductor voltage(low, medium, high, EH), live, dead, cut-out, conduit, system
		2nd (15.02.2023)	danger, Installation, earthing system, span, volt, switch gear, etc.
		3rd (15.02.2023)	1.2 General safety precautions, rule 29, 30, 31, 32, 33, 34, 35, 36, 40, 41, 43, 44, 45, 46.
2	2nd Week	1st (20.02.2023)	1.3 General conditions relating to supply and use of energy : rule 47, 48, 49, 50, 51, 54, 55, 56
		2nd (21.02.2023)	1.4 OH lines : Rule 74, 75, 76, 77, 78, 79, 80, 86, 87, 88, 89, 90, 91
		3rd (22.02.2023)	Electrical installations, domestics, industrial, Wiring System, Internal distribution of Electrical Energy.
		4th (22.02.2023)	Methods of wiring, systems of wiring, wire and cable, conductor materials used in cables, insulating materials mechanical protection.
		5th (25.02.2023)	Types of cables used in internal wiring, multi-stranded cables, voltage grinding of cables, general specifications of cables.
3	3rd Week	1st (27.02.2023)	2. 2 ACCESSORIES: Main switch and distribution boards,
		2nd(28.02.2023)	conduit accessories and fittings, lighting accessories and fittings, fuses,
		3rd(01.03.2023)	important definitions, determination of size of fuse – wire, fuse units. Earthing conductor,
		4th(01.03.2023)	earthing, IS specifications regarding earthing of electrical installations,points to be earthed
		5th(04.03.2023)	Determination of size of earth wire and earth plate for domestic and industrial installations.
4	4th Week	1st(06.03.2023)	Material required for GI pipe earthing.
		2nd (11.03.2023)	2. 3 LIGHTING SCHEME: Aspects of good lighting services.
5	5th Week	1st (13.03.2023)	Types of lighting schemes, design of lighting schemes, factory lighting, public lighting installations
		2nd (14.03.2023)	street lighting, general rules for wiring, determination of number of points
		3rd(15.03.2023)	determination of total load, determination of Number of sub-circuit.
		4th(15.03.2023)	3 . 1 Type of internal wiring, cleat wiring, CTS wiring
		5th(18.03.2023)	wooden casing capping, metal sheathed wiring, conduit wiring,
6	6th Week	1st(20.03.2023)	their advantage and disadvantages comparison and applications
		2nd(21.03.2023)	Prepare one estimate of materials required for CTS wiring for small domestic installation of one room and one verandah within 25 m2 with given light, fan & plug points.
		3rd(22.03.2023)	3 . 3 Prepare one estimate of materials required for conduit wiring for small domestic installation of one room and one verandha within 25 m2 with given light, fan & plug points
		4th(22.03.2023)	3 . 3 Prepare one estimate of materials required for conduit wiring for small domestic installation of one room and one verandha within 25 m2 with given light, fan & plug points
		5th (25.04.2023)	3 . 3 Prepare one estimate of materials required for conduit wiring for small domestic installation of one room and one verandha within 25 m2 with given light, fan & plug points
7	7th Week	1st(27.04.2023)	3 . 3 Prepare one estimate of materials required for conduit wiring for small domestic installation of one room and one verandha within 25 m2 with given light, fan & plug points
		2nd(28.04.2023)	3 . 3 Prepare one estimate of materials required for conduit wiring for small domestic installation of one room and one verandha within 25 m2 with given light, fan & plug points

		3rd(29.04.2023)	3.4 Prepare one estimate of materials required for concealed wiring for domestic installation of two rooms and one latrine
		4th(29.04.2023)	3.4 bath, kitchen & verandah within 80m2 with given light, fan & plug points.
8	8th Week	1st(03.04.2023)	4.1. Main components of overhead lines, line supports, factors Governing Height of pole, conductor materials
		2nd(04.04.2023)	Problem Solve
		3rd(05.04.2023)	4.1 determination of size of conductor for overhead transmission line, cross arms, pole brackets and clamps, guys and stays
		4th(05.04.2023)	4.2 conductors configurations, spacing and clearances, span lengths, overhead line insulators, types of insulators
		5th(08.04.2023)	4.1 lighting arresters, danger plates, anti-climbing devices, bird guards
9	9th Week	1st(10.04.2023)	4.1 beads of jumpers, jumpers, tee-offs, guarding of overhead lines.
		2nd(11.04.2023)	Problem Solve
		3rd(12.04.2023)	4.2 Prepare an estimate of materials required for LT distribution line within load of 100 KW maximum and standard spans involving
		4th(12.04.2023)	4.2 Prepare an estimate of materials required for LT distribution line within load of 100 KW maximum and standard spans involving
		5th(15.04.2023)	4.2 calculation of the size of conductor (from conductor chart), current carrying capacity and voltage regulation consideration using ACSR.
10	10th Week	1st(17.04.2023)	4.3 Prepare an estimate of materials required for LT distribution line within load of 100 KW maximum and standard spans involving
		2nd(18.04.2023)	4.3 calculation of the size of conductor (from conductor chart), current carrying capacity and voltage regulation consideration using ACSR.
		3rd(19.04.2023)	4.3 calculation of the size of conductor (from conductor chart), current carrying capacity and voltage regulation consideration using ACSR.
		4th(19.04.2023)	4.4 Prepare an estimate of materials required for HT distribution line (11 KV) within 2 km and load of 2000 KVA maximum
		5th(22.04.2023)	4.4 standard spans involving calculation of the size of conductor (from conductor chart), current carrying capacity
11	11th Week	1st(24.04.2023)	4.4 voltage regulation of the size of conductor (from conductor chart), current carrying capacity and voltage regulation consider action using ACSR.
		2nd(25.04.2023)	5.1 Components of service lines, service line (cables and conductors),
		3rd(26.04.2023)	Problem Solve
		4th(26.04.2023)	5.1 bearer wire, lacing rod. Ariel fuse, service support, energy box and meters etc.
		5th(29.04.2023)	5.2 Prepare and estimate for providing single phase supply of load of 5 KW (light, fan, socket) to a single stored residential building.
12	12th Week	1st(01.05.2023)	5.2 Prepare and estimate for providing single phase supply of load of 5 KW (light, fan, socket) to a single stored residential building.
		2nd(02.05.2023)	5.3 Prepare and estimate for providing single phase supply load of 3KW to each floor of a double stored building having separate energy meter.
		3rd(03.05.2023)	5.3 Prepare and estimate for providing single phase supply load of 3KW to each floor of a double stored building having separate energy meter.
		4th(03.05.2023)	5.4 Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using insulated wire.
		5th(06.05.2023)	5.4 Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using insulated wire.
13	13th Week	1st(08.05.2023)	5.4 Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using insulated wire.
		2nd(09.05.2023)	5.5 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.
		3rd(10.05.2023)	Problem Solve
		4th(10.05.2023)	5.5 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.
		5th(13.05.2023)	6. 1 Prepare one materials estimate for following types of transformer substations.
		1st(15.05.2023)	6.1.1 Pole mounted substation.

	14th Week	2nd(16.05.2023)	6.1.1 Pole mounted substation.
		3rd(17.05.2023)	6.1.2 Plinth Mounted substation.
		4th(17.05.2023)	6.1.2 Plinth Mounted substation.
		5th(20.05.2023)	Problem Solve
	15th Week	1st(22.05.2023)	Problem Solve
		2nd(23.05.2023)	Problem Solve