

Lesson Plan

Faculty	Mr. SOHAN SHARMA		
Discipline	Electrical Engineering		
Semester	6th		
Subject	Installation and Maintenance of Electrical Equipment		
Duration	15 Weeks (from 20 January 2025 to 2nd May 2025)		
Work Load per Week	Lecture – 02 ; Practical - 02		
		Theory	PRACTICALS
Week	Lecture Day	Topic	Name of Practical
I	1	Introduction of the Subject: Installation and Maintenance of Electrical Equipment	Introduction of the Lab
	2	Tools and Accessories for Installation and Maintenance 1.1 Tools: Tools, accessories and instruments required for installation, maintenance and repair work.	
II	1	Workmen's safety devices. Underground cable handling equipment. using fire extinguisher for safety against fire.	1. Write IE rules related to safety and demonstrate the steps taken when a person comes in contact with a live wire.
	2	1.2 IER rules: Knowledge of Indian Electricity rules, safety codes, causes and prevention of accidents. Meaning of Authorized persons, anti-climbing devices and danger plates, caution notice.	
III	1	Clearances rules for crossing of transmission and distribution line to roads, streets, power/telecommunication lines, river and railway line.	2. Study of tools, accessories and instruments required during installation, maintenance and repair of electrical equipment.
	2	1.3 Necessity of Maintenance, Types of maintenance.	
IV	1	Installation and maintenance of transmission and Distribution lines 2.1 Installation of Line: Method of erection of steel structures and pole support.	3. Study the steps required for erection of steel structure along with connection of all accessories viz. jumpers, tee points, insulators, joints etc. during installation of a transmission line.
	2	Connection of jumpers, tee-off points, joints and dead ends. Earthing of transmission lines and guarding.	
V	1	Arrangement for different types of insulators. Installation and use of Bird guards, earth wire and guy wires.	4. Measure insulation resistance of Three-phase PVC cable in a distribution board.
	2	Laying of service lines, provision of service fuses, installation of energy meters.	
VI	1	2.2 Maintenance of Line: Patrolling and visual inspection of lines, special inspections and night inspections.	5. Study of steps required for erection of distribution line along with connection of all accessories viz. jumpers, tee points, insulators, joints etc. during installation of a distribution line.
	2	Permit to work, arranging of shut downs personally, temporary earthing, cancellation of permit and restoration of supply.	

VII	1	Maintenance schedule of busbars, isolating switches, Relays, circuit breakers, LT switches.	6. Study of tests done at the time of commissioning of transmission and distribution line as per IS standards.
	2	Installation and Maintenance of Underground Cables 3.1 Installation of Cable: Inspection, storage, transportation and handling of cables.	
VIII	1	Clearances from other department such as Municipal, Highway authorities, railway, etc.	7. Prepare list of all electrical accessories required for installation of Pole mounted substation, Plinth mounted substation.
	2	Different methods of laying cable. Introduction to Cable filling compounds, Epoxy resin and hardeners.	
IX	1	3.2 Maintenance of Cable: Cable jointing and termination.	8. Study of various pre-installation tests as per IS standard done on following electrical equipment viz Electrical motors, Electrical Generators, Transformers and Underground cables.
	2	Assignment	
X	1	Test	9. Study of various pre-commissioning tests as per IS standard done on following electrical equipment viz Electrical motors, Electrical Generators, Transformers and Underground cables.
	2	Installation and Maintenance of Electrical Machine 4.1 Installation of Machine: Inspection and handling of transformers and motors.	
XI	1	Installation of power and distribution transformers. Installation of CT and PT. Dehydration of Transformer.	10. Prepare maintenance schedule of Power transformer.
	2	4.2 Maintenance of Machine: Preventive Maintenance schedule of transformer below and above 1000KVA.	
XII	1	Maintenance schedule of CT and PT. Preventive Maintenance schedule of motors, over hauling of motors, trouble shooting of electric motors.	11. Prepare maintenance schedule of Distribution Transformer.
	2	Testing and Commissioning of Electrical Equipment 5.1 Testing of insulator.	
XIII	1	5.2 Testing of transmission and distribution line before commissioning.	12. Prepare maintenance schedule of Motors.
	2	5.3 Testing of electrical motor.	
XIV	1	5.4 Testing of transformers.	File checking and Viva voce
	2	Test	
XV	1	Assignments	File checking and Viva voce
	2	Revision	