

Trades Details Summary

Trade Name	Description	Duration (Days)
Electrical	Theory and practical session to give technical training in Electrical trade	18

Theory (Electrical)

Topic	Keylearning Outcomes	Equipment Required	Duration
Registration of participants	<ul style="list-style-type: none"> Self-declaration of Covid-19 measures guidelines Participants Profile. Describe the role of an Electrical Technician. 	White Board	2:0
Electrical safety & Knowledge about PPEs	<ul style="list-style-type: none"> What is Safety? Awareness about General Safety. Electrical Safety. Use of PPEs. Advantages of Safety. Do's & Don'ts. 	Power Presentations	2:0
Introduction of Electricity	<ul style="list-style-type: none"> Brief about electrical Trade. Introduction of Electricity. Basic knowledge of Electricity. Important Symbols used in Electricity. Knowledge of general Electrical Instruments Knowledge about Resistance, Inductance & Capacitance 	Power Presentations	1:30
Carry out wall chasing and external threading on MS conduit	<ul style="list-style-type: none"> Brief about electrical wirings and methods adopted in electrification of buildings. Electrical fixtures used in electrical wiring works. Procedure of measurement and marking. Standard method of wall chasing and necessary precautions to be taken during the activity. Power tools and hand tools required for wall chasing. Common accessories used for fixing of conduits. Safety precautions / PPE's used in wall chasing and conduit fixing. Systems of Conduit fixing using appropriate accessories. Brief about specification of conduits and their use. Standard housekeeping practices post wall chasing work. Standard procedure of handling & storing of electrical materials required for wiring works. How to carry out threading on MS conduits. Tools & equipment's used for threading work. Installation of Switch Board & wiring material. Installation MCB & Distribution Box. Determination of Loads. 	Power Presentations	1:30
House hold gadgets Tube light, Ceiling Fan & Regulator	<ul style="list-style-type: none"> Knowledge of circuit diagrams and electrical code/specification of the electrical equipment. Tube light. Ceiling Fan. Regulator. 	Power Presentations	1:30
House hold gadgets Iron, Heater Theory Duration	<ul style="list-style-type: none"> Knowledge of circuit diagrams and electrical code/specifications of the electrical equipment Knowledge of loads in kW, Current in Amperes and Energy consumption in KWH for each appliances. Electric Iron (Normal & Automatic). Electric Heater. 	Power Presentations	2:0
House hold gadgets Iron, Heater Theory Duration	<ul style="list-style-type: none"> Knowledge of circuit diagrams and electrical code/specifications of the electrical equipment Knowledge of loads in kW, Current in Amperes and Energy consumption in KWH for each appliances. Electric Iron (Normal & Automatic). Electric Heater. 	Power Point Presentations	2:0
House hold gadgets Table Fan Desert /Room Cooler Theory Duration	<ul style="list-style-type: none"> Knowledge of circuit diagrams and electrical code/specifications of the electrical equipment Understand the capacity in kW, load in Amperes and power consumption in KWH for each appliance Table Fan Desert/ Room Cooler 	Power Point Presentations, Trainer Guide	1:30
House hold gadgets Motors	<ul style="list-style-type: none"> Knowledge of circuit diagrams and electrical code/specifications of the electrical equipment Understand how a rotating field is developed in single phase motor. Understand the significance of the number of poles in motor winding for speed and connections for change of direction. Various types of winding wires, their gauge and insulating materials for motor winding. Types of Motors and its uses. Winding of a Motor i.e. (Ceiling Fan). 	Power Point Presentations	1:30
Controlling Equipment of a Motor Starter (DOL/Star Delta)	<ul style="list-style-type: none"> Knowledge of circuit diagrams and electrical code/specifications of the electrical equipment DOL Starter. Star Delta Starter. 	Power Point Presentations	2:0

Staircase and Godown Wiring	<ul style="list-style-type: none"> Brief about staircase & Godown Wiring with sketch or drawing. Electrical fixtures used in electrical wiring works. Procedure of measurement and marking. Standard method of wall chasing and necessary precautions to be taken during the activity. Power tools and hand tools required for wall chasing. Common accessories used for fixing of conduits. Safety precautions / PPE's used in wall chasing and conduit fixing. Systems of Conduit fixing using appropriate accessories. Brief about specification of conduits and their use. Standard housekeeping practices post wall chasing work. Standard procedure of handling and storing of electrical materials required for wiring works. How to carry out threading on MS conduits. Tools and equipment's used for threading work. Installation of Switch Board & wiring material. Stair Case Wiring. Godown Wiring. 	Power Point Presentations	2:0
Inverter, UPS, Battery	<ul style="list-style-type: none"> Brief about UPS/Inverter & their circuit connections, Power backup develop in case of supply failure, Determination of capacity of Battery Size and Capacity Calculation for a load Specific health and safety precautions which must be taken when carrying out repair and maintenance, associated hazards, working at heights and PPE's must be worn Service warranty of electrical gadgets, opening of company's seal and authorization 	Power Point Presentations	2:0
Battery Charger, Choke & Condenser, Diode and Transformer	<ul style="list-style-type: none"> Brief about Charger, Choke & Condenser, Diode & Transformer. Circuit Diagram of a Common Charges & their connections. Power backup develop in case of supply failure, Specific health and safety precautions which must be taken when carrying out repair and maintenance, associated hazards, working at heights and PPE's must be worn. Service warranty of electrical gadgets, opening of company's seal and authorization. 	Power Point Presentations	1:30
Valedictory	<ul style="list-style-type: none"> Work Ethics. Personal Financial Planning. Health. 	Power Point Presentations, White Board	2:0
Effective Communication	<ul style="list-style-type: none"> Subordinates. Peers. Superiors. Customers. 	Audio-Video	5:0
First Aid	<ul style="list-style-type: none"> Electrocution. Cut. Bleeding. Faint. Bandage. Resuscitation. Ambulance. 	Audio-Video	4:0
Material Handling	<ul style="list-style-type: none"> Movement of Raw Material. Movement of Finished Material. Waste Segregation. Cleanliness. Stacking. 	Audio-Video	3:0
Financial Management	<ul style="list-style-type: none"> Financial Management. Financing by banks or others (NGO/CSR). Electrical Equipments. Presentations, White Board * Loan Scheme like Mudra Loan 	Power Point Presentations, White Board	2:0
Orientation Programme & Introduction about Entrepreneurship	<ul style="list-style-type: none"> Entrepreneur, Entrepreneurship and Enterprise Scheme & Types of Entrepreneurship Importance of Entrepreneurship Entrepreneurship Opportunities & Challenges Startup Business Cash Flow * Incubation Centre like DIC & IIT (BHU) 	PPT	2:0

Practical (Electrical)

Topic	Keylearning Outcomes	Equipment Required	Duration
Measurement of Resistance	Measurement of Resistance of Series Circuit • Measurement of Resistance of Parallel Circuit • Measurement of Resistance of Mixed Circuit	Multi-Trainer Kit & leads of Red, Yellow, Blue & Green Colours, Personal Protective Equipment (PPE*).	2:0
Measurement of Electrical Parameters	<ul style="list-style-type: none"> Measurement of Current. Measurement of Voltage. Measurement of Power. 	Ammeter, Voltmeter, Wattmeter, Multimeter, Lead, Wires & personal protective equipment	5:0
Prepare for the Concealed Wiring Practical Duration	<ul style="list-style-type: none"> Carry out marking and measurement on wall prior to chasing as per instruction using appropriate marking tools and instruments. Chase wall of given depth using appropriate tools. Fix conduit in the chased wall using appropriate accessories. Cutting & edge preparation of MS conduits. Threading of MS conduits using die stocks. Maintenance/ upkeep of tools & house-keeping at workplace. Installation of PVC Conduit/Casing Capping. Laying of Wires in PVC Conduit/Casing Capping. Connection of Ceiling Rose, Light fitting & Fans. Switch board & MCB & Distribution Board Connections. 	SP MCB -6A, 10A, 16A, 32A DP MCB- 20A, 32A, 40A TP/FP MCB – 40A/63A MCB DBs- SPN /TPN, Switch & Socket-5A/15A Wires-1.5/2.5/ 4sq.mm, PVC Conduit, Casing Capping, Bend, Saddles, PVC Gully, Screw, Ceiling Rose	6:0

Maintenance and Repair of house hold gadgets Tube light, Ceiling Fan, Regulator	<ul style="list-style-type: none"> • Ensure presence of appropriate devices for isolating and switching. • Ensure preventive maintenance, regular cleaning, oiling, greasing of household gadgets like fans, Tube lights etc. • Check connection of equipment and status of tripping device. • Ensure regular maintenance of FL tube starters & chokes. • Ensure preventive maintenance, regular cleaning, oiling, greasing of household gadgets like fans, Tube light etc. • Tube light Connection & Measurement of Lux. • Installation of Ceiling Fan. • Main & Auxiliary Winding Connection of a fan. • Connection of Condenser. • Connection of Regulator. • Continuity testing of above house hold gadgets. 	Tube Lights, Lux meter & Wires, Ceiling Fan, Regulators, Multimeter, Personal Protective Equipment (PPE*).	6:0
Maintenance and Repair of house hold gadgets	<ul style="list-style-type: none"> • Ensure presence of appropriate devices for isolating and switching. • Check connection of equipment and status of tripping device. • Ensure regular maintenance of Electric Iron (Normal & Automatic) & Heater. • Understand material used to make various types of heating elements like Nichrome, Kanthal, Eureka etc., various shape, size and capacity of heating elements according to applications and usages. • Understand types of thermal insulations used in above items like Mica, Asbestos, Ceramics, Glass-Wool etc. • Understand about timers, thermal relays and bimetallic strips. • Continuity Testing of Iron and Heater 	Normal Iron, Automatic Iron, Multimeter & Lead Wires, Electric Heater, Personal Protective Equipment (PPE*).	6:0
Demonstration and Practical on Charger	<ul style="list-style-type: none"> • Ensure all electrical connections as per specification, measure and record DC/AC voltages and currents and identify the faults in the system. • Connection of Diodes (Half Wave, Full Wave or Bridge Connection). • Connection of Chokes, Condenser, Transformer • Testing of Continuity. • Testing for Charging of Batteries. • Take adequate precautionary measures while handling electrical system adhering to relevant health and safety standards. 	Battery, Choke & Condenser, Diode, Transformer, Personal Protective Equipment (PPE*).	6:0
Maintenance and Repair of house hold gadgets Table Fan, Desert/ Room Cooler	<ul style="list-style-type: none"> • Ensure presence of appropriate devices for isolating and switching • Ensure preventive maintenance, regular cleaning, oiling, greasing of household gadgets like Table fans, desert cooler/ Room Cooler etc. • Check connection of equipment and status of tripping device • Operate principle of single phase motor, various types of motors like self- start, capacitor start, capacitor run, universal motors and their applications and functions of condenser • Various parts of motors, pumps and their functions like ball bearings, cooling fans and bushes • Connection of Table Fan & Desert /Room Cooler • Continuity testing of above appliances 	Table Fan & Desert / Room Cooler, Multimeter & Lead Wires , personal protective equipment (PPE*).	5:0
Maintenance and Repair of house hold gadgets Ceiling Fan Motor	<ul style="list-style-type: none"> • Ensure presence of appropriate devices for isolating and switching. • Ensure preventive maintenance, regular cleaning, oiling, greasing of Motor etc. • Check connection of equipment and status of device. • Operate principle of single phase motor, various types of motors like self- start, capacitor start, capacitor run, universal motors and their applications and functions of condenser. • Various parts of motors and their functions like ball bearings and bushes. • Check insulation resistance of motor winding with live conductors to earth and between live conductors. • Check for working condition of fuses/ circuit breakers and all wires/cables for loose connections. • Winding of a Ceiling Fan. • Overhauling of a Ceiling Fan. • Provision of Split Pin. • Continuity Testing of a Fan. • Testing of Speed of a Fan. • Understand that if reason of error is not clear, do not try to fix anything and call OEM repair and maintenance team. 	Ceiling Fan, Copper wire for Winding, Multimeter, Bearing, Condenser, Speedometer, Personal Protective Equipment (PPE*).	5:0
Maintenance & Repair of a Starter	<ul style="list-style-type: none"> • Ensure presence of appropriate devices for isolating and switching. • Ensure preventive maintenance of Starter. • Check connection of equipment and status of tripping device. • Check for working condition of fuses, circuit breakers and all cables for loose connections. • Verify system grounding and measure insulation resistance. • Connection of Power Circuit & Control Circuit. • Cleaning of Contactors, Push buttons. • Testing of Over- load Relay. • DOL Starter connection. • Measurement of Starting Current. • Measurement of Running Current. • Continuity testing of above item. • Understand that if reason of error is not clear, do not try to fix anything and call OEM repair and maintenance team. 	Single Phase Induction Motor (2HP), DOL Starter, Clamp Meter, Voltmeter, Ammeter, Wattmeter, MCB DB, Personal Protective Equipment (PPE*).	6:0

<p>Prepare for Staircase and Godown Wiring</p>	<ul style="list-style-type: none"> • Carry out marking and measurement on wall prior to chasing as per instruction using appropriate marking tools and instruments • Chase wall of given depth using appropriate tools • Fix conduit in the chased wall using appropriate accessories • Cutting and edge preparation of MS conduits • Threading of MS conduits using die stocks • Maintenance/ upkeep of tools and house-keeping at workplace • Switch board Connection • Installation of PVC Conduit/Casing Capping • Laying of Wires in PVC Conduit/Casing Capping • Connection of Ceiling Rose, Light fitting • Connection of Stair Case Wiring • Connection of Godown Wiring • Connection of Lamps • Testing of Continuity 	<p>Switch -5A, 2-Way Switch-5A, Wires-1.5 sq.mm, PVC Conduit, Casing Capping, Bend, Saddles, PVC Gully, Screw, Ceiling Rose, Personal Protective Equipment (PPE*).</p>	<p>6:0</p>
<p>Demonstration & Practical on Inverter, UPS, Battery</p>	<ul style="list-style-type: none"> • Preventative maintenance of UPS/Inverter and batteries. • Ensure all electrical connections as per specification, measure and record DC/AC voltages and currents and identify the faults in the system. • Trickle charging, checking of battery status and their schedule checkups. • Connection of Cells/Batteries. • Connection of UPS/Inverter. • Battery Connection & Charging of Batteries. • Take adequate precautionary measures while handling electrical system adhering to relevant health and safety standards. 	<p>Inverter/UPS, Batteries, Chargers, Wires, Multimeter, Personal Protective Equipment (PPE*).</p>	<p>6:0</p>
