

Trades Details Summary

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

Theory (Fitter)

Topic	Keylearning Outcomes	Equipment Required	Duration
Registration of participants	<ul style="list-style-type: none"> • Covid Declaration • Participants Profile • Describe the role of a fitting technician 	White Board	2:0
Orientation Programme & Introduction about Entrepreneurship	<ul style="list-style-type: none"> • Describe the role and responsibilities of a Fitting Technician Level Basic • Describe safety requirements for equipment, auto components and aggregates. • Describe safety, health policies and regulations at the workplace. • Entrepreneur, Entrepreneurship and Enterprise • Types of Entrepreneurship • Importance of Entrepreneurship • Entrepreneurship Opportunities & Challenges • Startup Business • Cash Flow 	Presentations, Trainer Guide.	2:0
Fitting safety & Knowledge about PPEs	<ul style="list-style-type: none"> • What is Safety • Awareness about General Safety • Fitting Safety • Use of PPEs: Hand Gloves, Safety Goggles, Apron, Earplugs • Advantages of Safety • Do's & Don'ts 	Presentations, Trainer Guide, personal protective equipment (PPE).	2:0
Introduction to Fitter Trade	<ul style="list-style-type: none"> • Definition of Fitter • Explain different types of fitting processes: Surface Smoothness, Squaring, Male-Female Fitting, Drilling, etc. and associated equipments. • Importance of Fitter • Uses of Fittings 	Presentations, Trainer Guide	2:0
Precision Measuring Instruments	<ul style="list-style-type: none"> • Micrometer (a) Parts and purpose (b) Least Count (c) How to read and take measurement (d) Importance of accuracy and precision • Vernier Calipers (a) Parts and purpose (b) Least Count (c) How to read and take measurement (d) Importance of accuracy and precision • Precautions 	Presentations, Trainer Guide	2:0
Limits, Fits and Tolerance	<ul style="list-style-type: none"> • Limit, Types of Limit and its uses • Fits, Types of Fits and its uses • Tolerance, Types of Tolerance and its uses • Allowance, Types of Allowance and its uses • Precautions 	Presentations, Trainer Guide	2:0
Fitter Marking and Marking Tools	<ul style="list-style-type: none"> • Describe various types of marking methods • Marking media, types and uses • Punch, types and uses • Scriber, types and uses • Divider and its uses • Marking of table and its uses 	Presentations, Trainer Guide, personal protective equipment (PPE).	2:0

Fitter Hand Tools	<ul style="list-style-type: none"> Describe various types of hand tools Hammers, its types and uses Vises, its types and uses Clamps, their types and uses Screw Drivers, its types and uses Wrenches and Spanners, their types and uses Pliers, its types and uses 	Presentations, Trainer Guide, personal protective equipment (PPE).	2:0
Fitter Cutting Tools	<ul style="list-style-type: none"> Describe various types of cutting tools Chisels, its types and uses Chipping operation and methods Files, its types and uses Filing operation and methods Hacksaw Frame and its types Hacksaw Blade and its types Hacksawing operation, methods and precautions Chipping operations as per drawing 	Presentations, Trainer Guide, personal protective equipment (PPE).	2:0
Drilling, Tapping, and Reaming	<ul style="list-style-type: none"> Drill, and its types Drill machines and their types Methods of Drilling Operation Reamer, and its types Methods of Reaming Tap, and its types Methods of Tapping Precautions 	Presentations, Trainer Guide, personal protective equipment (PPE).	2:0
Method of Threading with Dieing and Scraping	<ul style="list-style-type: none"> Die, and its types Die Stock and its types Methods of Threading Scraper, and its types Methods of Scraping on flat surface Precautions 	Training Kit (Presentations, Trainer Guide), personal protective equipment (PPE).	2:0
Financial Management	<ul style="list-style-type: none"> Financial Management Resources / Fund availability by Bank 	Presentations, White Board	2:0
Doubt Clearing	<ul style="list-style-type: none"> Feed Back Group discussion 	Presentations, White Board	2:0
Valedictory	<ul style="list-style-type: none"> Work Ethics Personal Financial Planning Health 	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
Fitting Measuring Tools and Units	<ul style="list-style-type: none"> Knowledge of Measuring tools and units Measurement and different types of measuring tools Steel Rule, types and its uses Try square, types and its uses Calipers, types and its uses Measuring units: M.K.S., C.G.S. and F.P.S. Precautions 	Presentations, Trainer Guide	2:0

Practical (Fitter)

Topic	Keylearning Outcomes	Equipment Required	Duration
Fitter Practical	<ul style="list-style-type: none"> Filing and Squaring of Job as per drawing 	MS plate, flat files, calipers, steel rule and try square	5:0
Fitter Practical	<ul style="list-style-type: none"> Hacksawing and Stepping of Job as per drawing 	MS Plate, Hacksaw frame with blade, flat files, caliper, steel rule and try square	5:0

Fitter Practical	• Types of cutting (triangular, square and rectangular) and filing as per drawing	MS Plate, Hacksaw frame with blade, flat, square and triangular files, Vernier caliper, micrometer, steel rule and try square	6:0
Fitter Practical	• Male-Female Fitting (T-Fitting) of job as per drawing	MS Plate, Hacksaw frame with blade, flat, square and triangular files, Vernier caliper, micrometer, steel rule and try square	8:0
Fitter Practical	• Male-Female Fitting (Round Fitting) of job as per drawing	MS Plate, hacksaw frame with blade, flat file, round, half-round file, steel rules, Punch, Scriber, Divider, try square and calipers	8:0
Fitter Practical	• Male-Female Fitting (V-Fitting) of job as per drawing	MS Plate, Hacksaw frame with blade, bench vise, clamps, , hammer, flat and triangular files, steel rule and try square	8:0
Fitter Practical	• Filing, Drilling, Reaming and Tapping of Job as per drawing	MS Plate, caliper, flat files, Drill and Drill Machine, Reamer, Tap, Vernier Calipers, Micrometer, and try square	6:0
Fitter Practical	• Threading on Pipe as per drawing • Scraping of Job as per drawing	MS Plate, caliper, flat files, Die, Die Stock, Scraper, Vernier Calipers, Micrometer, and try square	6:0
Practical	• Chipping operations as per drawing	MS Plate, chisel, flat files, hammer, hacksaw frame and blade, steel rule, bench vise, clamps	6:0

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	• Self-declaration of Covid-19 measures guidelines • Participants Profile. • Describe the role of an Electrical Technician.	White Board	2:0
Financial Management	• Financial Management. • Financing by banks or others (NGO/CSR). • Electrical Equipments.	Power Point Presentations, White Board	2:0
Orientation Programme & Introduction about Entrepreneurship	• Describe the role and responsibilities of an Electrical Technician Level Basic. • Describe safety requirements for equipment, auto components and aggregates. • Describe safety, health policies and regulations at the workplace. • Entrepreneur, Entrepreneurship and Enterprise. • Types of Entrepreneurship. • Importance of Entrepreneurship. • Entrepreneurship Opportunities & Challenges. • Startup Business. • Cash Flow.	Power Presentations	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

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

<p>Maintenance and Repair of household gadgets Tube light, Ceiling Fan, Regulator</p>	<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 household gadgets. 	<p>Tube Lights, Lux meter & Wires, Ceiling Fan, Regulators, Multimeter, Personal Protective Equipment (PPE*).</p>	<p>6:0</p>
<p>Maintenance and Repair of household gadgets</p>	<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 	<p>Normal Iron, Automatic Iron, Multimeter & Lead Wires, Electric Heater, Personal Protective Equipment (PPE*).</p>	<p>6:0</p>
<p>Demonstration and Practical on Charger</p>	<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. 	<p>Battery, Choke & Condenser, Diode, Transformer, Personal Protective Equipment (PPE*).</p>	<p>6:0</p>

<p>Maintenance and Repair of household gadgets Table Fan, Desert/ Room Cooler</p>	<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 	<p>Table Fan & Desert / Room Cooler, Multimeter & Lead Wires , personal protective equipment (PPE*).</p>	<p>5:0</p>
<p>Maintenance and Repair of household gadgets Ceiling Fan Motor</p>	<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. 	<p>Ceiling Fan, Copper wire for Winding, Multimeter, Bearing, Condenser, Speedometer, Personal Protective Equipment (PPE*).</p>	<p>5:0</p>
<p>Maintenance & Repair of a Starter</p>	<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. 	<p>Single Phase Induction Motor (2HP), DOL Starter, Clamp Meter, Voltmeter, Ammeter, Wattmeter, MCB DB, Personal Protective Equipment (PPE*).</p>	<p>6:0</p>

Prepare for Staircase and Godown Wiring	<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 	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*).	6:0
Demonstration & Practical on Inverter, UPS, Battery	<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. 	Inverter/UPS, Batteries, Chargers, Wires, Multimeter, Personal Protective Equipment (PPE*).	6:0

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

Theory (Welding)

Topic	Keylearning Outcomes	Equipment Required	Duration
Registration of participants	<ul style="list-style-type: none"> COVID Declaration Participants Profile Describe the role of a welding technician 	Presentations, White Board	2:0
Orientation Programme & Introduction about Entrepreneurship	<ul style="list-style-type: none"> Describe the role and responsibilities of a Welding Technician Level Basic Describe safety requirements for equipment, auto components and aggregates. Describe safety, health policies and regulations at the workplace. Entrepreneur, Entrepreneurship and Enterprise Types of Entrepreneurship Importance of Entrepreneurship Entrepreneurship Opportunities & Challenges Startup Business Cash Flow 	Presentations, White Board	2:0

Welding safety & Knowledge about PPEs	<ul style="list-style-type: none"> • What is Safety • Awareness about General Safety • Welding Safety • Use of PPEs • Advantages of Safety <p>Cover the equipment so that there is limited contact with dust and moisture.</p> <ul style="list-style-type: none"> • Clean the working area under the process regularly to create a healthy, clean and safe working environment. • Clean the equipment and process auxiliaries regularly to remove any dust, moisture, waste material which would have got collected on the equipment. • Identify potential hazards at the work site while engaging in a maintenance activity and take appropriate action. • Identify activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals, loud noise. • Describe the safety procedures (firefighting, first aid) to be followed within the organization. • Describe the various types of PPE and their usage. • Operate the machine using the recommended Personal Protective Equipment (PPE). • Maintain a clean and safe working environment near the workplace and ensure there is no spillage of chemicals, production waste, oil, solvents etc. • Ensure the work area, tools, equipment and materials are clean. • Do's & Don't's 	Presentations, White Board, Personal Protective Equipment (PPE*). Demonstration	3:0
Introduction of welding (SMAW/GMAW/GTAW)	<ul style="list-style-type: none"> • Definition of Welding • Explain different types of welding processes and associated equipment. • Importance of Welding • Uses of Welding • Clean the surface of the electrodes and the welding gun to remove dust and any other impurities by collaborating with the helper. • Clean other welding machine auxiliaries (Welding Transformer, Gas Discharge unit, Flux wire) before the initiation of the welding process. • Set up the welding apparatus as per the selected welding process, the internal operating procedures and the setting standards for the machine. 	Presentations, White Board, Personal Protective Equipment (PPE*).	2:0
Welding equipments & machines (SMAW)	<p>What is Welding Equipments</p> <ul style="list-style-type: none"> • Types of Welding Machines - Transformer, AC / DC Machine, Rectifier, Inverter Base Machines, CC/CV modes • Accessories - Electrode Holder, Cable, Lugs, Wire Brush, Chipping hammer etc. • Duty Cycle of Welding Machines, Power Factor • Codal Life of Welding Machine 	Presentations, White Board, Personal Protective Equipment (PPE*), Demonstration of accessories	2:0
Type of welding joints & Edge preparation	<ul style="list-style-type: none"> • List the features of different types of joints. • Butt Joint • T' Joint • Lap Joint • Corner Joint • Edge Joint • Type of Groove • Explain the basic principles of geometry and drawing. 	Presentations, White Board, Personal Protective Equipment (PPE*).	2:0

Welding positions	<ul style="list-style-type: none"> • Down Hand • Horizontal • Vertical • Overhead • 5G Position (Pipe Welding) • 6G Position (Pipe Welding) 	Training Kit (Presentations, White Board), personal protective equipment (PPE*).	2:0
Welding consumables	<ul style="list-style-type: none"> • What is Welding Consumables • Electrodes • Type of Electrode • Classification & Codification of Electrode • Type of Electrode Coating • Composition of Electrode • Coating Factor & Deposition Rate of Electrode • Storage & Handling of Welding Consumable • Identify the various welding parameters like temperature, pressure, electrode type, electrode distance (gap), Welding current, voltage, process time etc. before starting the welding process. • Select the correct type of electrode in terms of electrode material and thickness, filler material and flux which will be required for the selected welding process before the initiation of the welding process. 	Presentations, White Board, Personal Protective Equipment (PPE*).	2:0
Precautions in Welding (Before, After & During) & Inspection	<ul style="list-style-type: none"> • Describe different cleaning methods for electrodes, metal surfaces etc. • Dry Electrode • Tacking & Clamping Before welding • Cleaning of Weld Bead after every pass (Interpass Cleaning) • Slag Removal • Spatter Cleaning • Brief Introduction of Destructive & Non Destructive Test • Visual Inspection • Clean the surface of the metal parts (work pieces) which need to be joined. • Remove any extra material, sharp edges etc. which might impact the final welded product by using chippers, grinders etc. • Ensure that the dimensions of the work pieces available on the welding line are as per the product drawing/ sketches available with the • Operator. • Explain how to use measuring instruments like vernier calipers, micrometer. 	Presentations, White Board, Personal Protective Equipment (PPE*).	2:0
Welding Defects, causes & remedies	<ul style="list-style-type: none"> • What is Welding Defects • Defects & Discontinuities • Classification of Welding Defects • Explain the impact of various physical parameters like temperature, pressure, electrode distance on the properties of final output product like durability, ductility, surface feel etc. • Different Welding Defects - Causes & Remedies • Identify quality defects in work pieces. • Discard the pieces which are beyond repair. • Explain the methods which can repair pieces with minor defects such as cutting, shearing, hammering, drilling etc. • Repair the pieces which need minor modifications/ rework. • Rectify minor defects like excess slag, shape deformation, sharp edges, rough surfaces, grooves, holes etc. By Fettling, chipping, cutting, sawing, filling, shearing, hammering etc. 	Presentations, White Board, Personal Protective Equipment (PPE*).	2:0

Knowledge about Oxy Acetylene Gas cutting	• Principal of Gas Cutting Procedure • Gas Cutting Plant & Equipments • Classification of Flams • Efficiency of Gas Cutting • Gas Cutting Safety & Tips • Gas Cutting PPEs	Presentations, White Board, Personal Protective Equipment (PPE)	2:0
Financial Management	• Financial Management • Resources / Fund availability by Bank	Presentations, White Board	2:0
Doubt Clearing	• Feed Back • Group discussion	Presentations, White Board	2:0
Valedictory	• Work Ethics • Personal Financial Planning • Health	Presentations, White Board	2:0
Effective Communication	Subordinates • Peers • Superiors • Customers	Audio-Video	5:0
First Aid	• Electrocutation • Cut • Bleeding • Faint • Bandage • Resuscitation • Ambulance	Audio-Video	4:0
Material Handling	• Movement of Raw Material • Movement of Finished Material • Waste Segregation • Cleanliness • Stacking	Audio-Video	3:0

Practical (Welding)

Topic	Keylearning Outcomes	Equipment Required	Duration
Practical	• Arc Formation • Arc Stability	SMAW Welding Machine and Electrodes	5:0
Practical	• Learning Beading (12 mm Plate)	SMAW Welding Machine and Electrodes	5:0
Practical	• Learning Beading (12 mm Plate)	SMAW Welding Machine and Electrodes	5:0
Practical	• Learning Buildup (12 mm Plate)	SMAW Welding Machine and Electrodes	9:0
Practical	• Butt Joint (5 mm Plate)	SMAW Welding Machine and Electrodes	10:0
Practical	• Butt Joint (5 mm Plate)	SMAW Welding Machine and Electrodes	5:0
Practical	• 'T' Joint (5 mm Plate)	SMAW Welding Machine and Electrodes	15:0
Practical	• Gas cutting Practical	Oxy Acetylene Gas Cutting Plant	5:0

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

Theory (Machinist)

Topic	Keylearning Outcomes	Equipment Required	Duration
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Lathe Machine	<ul style="list-style-type: none"> • Introduction of Lathe Machine • Parts and their purpose • Chucks-Type and their advantages & disadvantages • Feed Mechanism • Application of Lathe Machine 	(Presentations, Trainer Guide), Lathe machine, MS Round bar, cutting tools, measuring tools, Personal Protective Equipment (PPEs)*.	2:0
Vertical Milling Machine	<ul style="list-style-type: none"> • Introduction of Vertical Milling Machine • Parts and their purpose • Importance of Milling Machine • Application of Vertical Milling Machine 	(Presentations, Trainer Guide)	2:0
Registration of participants	<ul style="list-style-type: none"> • Covid Declaration • Participants Profile • Describe the role of a Machine technician 	White Board	2:0
Orientation Programme & Introduction about Entrepreneurship	<ul style="list-style-type: none"> • Describe the role and responsibilities of a Machine Technician Level Basic • Describe safety requirements for equipments, auto components and aggregates. • Describe safety, health policies and regulations at the work place. • Entrepreneur, Entrepreneurship and Enterprise • Types of Entrepreneurship • Importance of Entrepreneurship • Entrepreneurship Opportunities & Challenges • Startup Business • Cash Flow 	(Presentations, Trainer Guide).	2:0
Machine safety & Knowledge about PPEs Theory Duration	<ul style="list-style-type: none"> • What is Safety • Awareness about General Safety • Machine Safety • Use of PPEs • Advantages of Safety • Safety signs for Danger, Warning and Cautions. • Do's & Don'ts 	(Presentations, Trainer Guide), Personal Protective Equipment (PPEs)*.	2:0
Introduction of Machining process	<ul style="list-style-type: none"> • Definition of Machine • Explain different types of Machining processes and associated tools & equipments • Importance of Machining • Uses of Machining 	(Presentations, Trainer Guide), Personal Protective Equipment (PPEs)*.	2:0
Measuring units	<ul style="list-style-type: none"> • Introduction – Measurement • M.K.S. units • C.G.S. units • F.P.S. units • S.I. units • Conversion of units 	(Presentations, Trainer Guide), Measuring Instruments (i.e. steel rule, measuring tape etc.) Personal Protective Equipment (PPEs)*.	2:0
Basic Concept of Engineering Drawing	<ul style="list-style-type: none"> • Types of lines and their Uses • Basic Concept of Quadrants and their sign • What is Projection • Types of Projection. • Drawing Symbol and their meaning 	(Presentations, Trainer Guide), Paper, Pencil, scale & eraser, Mini drafter drawing instruments, Personal Protective Equipment (PPEs)*.	2:0
Basic measuring tools	<ul style="list-style-type: none"> • Steel Rule. • Vernier Caliper (i) Parts and purpose (ii) Least Count (iii) How to read & take Measurement. (iv) Importance of Accuracy and Precision • Micrometer (i) Parts and purpose (ii) Least Count (iii) How to read & take Measurement. (iv) Importance of Accuracy and Precision 	(Presentations, Trainer Guide), Steel Rule. Vernier Caliper, Micrometer, Personal Protective Equipment (PPEs)*.	2:0
Drilling Machine	<ul style="list-style-type: none"> • Introduction. • Working Principle. • How to make a hole in work piece. (i) Selection of drill. (ii) Use of Drill Chuck and Chuck Key. (iii) Use of Taper Sleeve & Socket. (iv) Use of drift. 	(Presentations, Trainer Guide), Tri-square, Steel Rule, Scriber, Punch, Hammer, Drill machine, Drill bit, MS plate, Personal Protective Equipment (PPEs)*.	2:0

Financial Management	• Financial Management • Resources / Fund availability by Bank	Presentations, White Board	2:0
Doubt Clearing	• Feed Back • Group discussion	Presentations, White Board	2:0
Valedictory	• Work Ethics • Personal Financial Planning • Health	Presentations, White Board	2:0
First Aid	• Electrocutation • Cut • Bleeding • Faint • Bandage • Resuscitation • Ambulance	Audio-Video	4:0
Material Handling	• Movement of Raw Material • Movement of Finished Material • Waste Segregation • Cleanliness • Stacking	Audio-Video	3:0
Effective Communication	• Subordinate • Peers • Superiors • Customers	Audio-Video	5:0

Practical (Machinist)

Topic	Keylearning Outcomes	Equipment Required	Duration
Practical	• Use of Marking Tools-Punch, Tri-square • Marking of out lines for desired dimension. • Marking by Punch for drilling holes. • Drilling holes.	Tri-square, Steel Rule, Scriber, Punch, Hammer, Drill machine, Drill bit, MS plate, Personal Protective Equipment (PPEs)*	10:0
Practical	Different types of Machining processes and associated tools & equipments.	Different types of machines ,i.e.-lathe, drill, mill, etc.	5:0
Practical	• Measuring different types of components & conversion in different units.	Measuring Instruments (i.e. steel rule, measuring tape etc.)	5:0
Practical	• Drawing of "T" shape work piece and showing its dimensions in Orthographic Projection.	Paper, Pencil, scale & eraser, Mini drafter drawing instruments	5:0
Practical	• Setting, Measuring and taking reading by Vernier Caliper & Micrometer.	Steel Rule. Vernier Caliper, Micrometer	5:0
Practical	• Turning, step turning, facing etc.	Lathe machine, MS Round bar, cutting tools, measuring tools, Personal Protective Equipment (PPEs)*.	20:0
Practical	• Chamfering / Milling of MS plate at desired degree on Vertical Milling	Milling machine, MS plate, milling cutters, Measuring instruments.etc., Personal Protective Equipment (PPEs)*.	12:0