



CURRICULUM OF BUILDING MAINTENANCE TECHNICIAN

(6-Months)

Designed By:

Curriculum Design Committee of
Tariq Pipe Industries (Pvt.) Ltd.

ABSTRACT:

This Document Contains the newly developed course outline for the 6-month Building Maintenance Technician program, along with the total credit hours needed to complete it.

PROGRAMME OBJECTIVES

It is observed that Building Maintenance Technician tasks, such as fixing problems in electrical fixtures and appliances, and fixing and repairing plumbing and hardware work, are only carried out when men are present at home. Either the weekend is consumed with such work, or women at home call on known and experienced household staff for such building maintenance technician. This requires a trained and skillful female workforce to cater to society's needs.

MINHAS Professional Institute of Plumbing Education (MPIPE) is taking a courageous step by producing a workforce for building maintenance technician and, for this purpose, developing a comprehensive theoretical and practical building maintenance technician curriculum on which a workforce will be trained and ready to serve the market demand. The aim is to train a workforce through a theoretical syllabus and practical skills in **Electrical, Plumbing, Hardware, Information Technology and Continuing Professional Development**.

We believe that the workforce will be able to utilize their skills to serve society and play a positive role as independent & empowered citizens for the prosperity of the country.

Important features of the course include but are not limited to, Repair, Install, and Replace the following;

- **Electrical**: Buttons, sockets, dimmer, lights, and electrical wiring, etc.
- **Plumbing**: Water sewerage, and water supply lines, and sanitary work such as changing bath mixers, taps, connection pipes, etc.
- **Hardware**: Door locks, handles, catchers, wall-hanging elements, etc.
- **Information and Computer Technology**: Computer software and hardware, such as installation of Windows, new programs, printers, Wi-Fi adapters, etc.
- **Continuing Professional Development**: Preparing students for interviews, creating CVs and continuing professional development.

CURRICULUM SALIENT

Entry Level:	Middle
Course Duration:	6 Months
Training Hours:	720 Hours
No. of Hours of Training per Day:	5 Hours / Day
No. of Days of Training per Week:	6 Days / Week
Total Credit Hours of Training:	$5 \times 6 = 30 \text{ Hrs./Week}$ $30 \times 4 = 120 \text{ Hrs./Month}$ $120 \times 6 = 720 \text{ Credit Hours}$
Training Methodology:	Practical 80% Theory 20%
Medium of Instruction:	Urdu/English

SKILL COMPETENCY DETAILS

After successful completion of this course, students will be able to:

- Diagnose, fix, and repair electrical components including switches, sockets, dimmers, and wiring.
- Troubleshoot and repair electrical buttons, lighting systems, and circuit-related issues.
- Perform plumbing and sanitary maintenance, including changing bath mixers, taps, and connection pipes.
- Safely and effectively operate power tools such as drill machines and hand tools like saws, files, hammers, and screwdrivers.
- Install, replace, and repair door locks, handles, catchers, curtain railings, and other household fixtures.
- Diagnose, fix, and repair computer hardware components such as printers, Wi-Fi adapters, and peripheral devices.
- Install and troubleshoot computer software, including Windows operating systems and essential programs.

This course equips students with the necessary skills to confidently handle a wide range of building maintenance technician tasks, ensuring efficient home upkeep and repair capabilities.

SCHEME OF STUDIES
Building Maintenance Technician
(6-Month Course)

Sr. No	Main Topics	Theory Hours	Practical Hours	Total Hours
1	Electrical	32	162	194
2	Plumbing	32	162	194
3	Hardware	32	162	194
4	IT Basics	28	90	118
5	Professional Development	20	0	20
Total		144	576	720

DETAILS OF COURSE CONTENTS

Building Maintenance Technician

(6-Month Course)

Details of Topics	Theory Hours	Practical Hours
1. ELECTRICAL 1.1. Introduction to Electricity 1.1.1 Structure of Atom and its Particles 1.1.2 Definition of Electric Current 1.1.3 Introduction of Current, Volt, Resistance, and Power 1.1.4 Sources of Electricity 1.1.4.1. Thermal Energy 1.1.4.2. Wind Energy 1.1.4.3. Hydro Energy 1.1.4.4. Solar Energy 1.1.5 Types of Electricity 1.1.6 Conductors, Semi-conductors and Insulators 1.1.7 Introduction of Current, Volt, Resistance and Power 1.1.8 Ohm's Law 1.1.9 Series Circuit and Parallel Circuit 1.1.9.1.Introduction 1.1.9.2.Voltages 1.1.9.3.Current 1.2. Electric Meters 1.2.1 Measure Voltage using Volt Meter 1.2.2 Measure Current using Ampere Meter 1.2.3 Measure Current using of Clamp Meter 1.2.4 Measure Power using Watt Meter 1.2.5 Measure Voltage, Current & Power using Digital Multi Meter (DMM) 1.2.6 Calculate Power by Numerical Method	2	9
	2	9

1.2.7 Electricity Energy Meter	1	3
1.3. Alternatives of Energy		
1.3.1. Uninterrupted Power Supply (UPS)		
1.3.2. Solar System Energy	8	45
1.4. Basic electrical Problems and their Solutions	2	9
1.5. Inspection of the Main Panel	2	9
1.6. Introduction to Devices & Cables		
1.6.1. Introduction to electric wires and cables		
1.6.2. Striping / Peeling Techniques of Wires & Cables		
1.6.3. Bending Techniques of Wires & Cables		
1.6.4. Jointing Techniques of Wires & Cables	4	18
1.7. House-hold Wiring		
1.7.1. Plan of Wiring		
1.7.2. Estimation Cost of Wiring		
1.7.3. Wiring Techniques		
1.7.4. Wiring Insulations		
1.7.5. Thimble		
1.7.6. Connector Strip		
1.7.7. Soldering		
1.7.8. Piping		
1.7.9. Ducting		
1.7.10. Single Phase Wiring of a House	2	9
1.8. Circuits Protections		
1.8.1. MCCB		
1.8.2. ELCB / Earthing		
1.8.3. Fuse	1	3
1.9. Soldering		
1.9.1. Introduction		
1.9.2. Soldering Parts		
1.9.3. Method		
1.9.4. Advantages & Disadvantages		

1.10. Cells & Batteries 1.10.1. Introduction 1.10.2. Types of Batteries 1.10.3. Voltages of Batteries 1.10.4. Amperes of Batteries	1	3
1.11. Installation & Repairs 1.11.1. Installation & repair of electrical sockets, etc. 1.11.2. Installation & repairing of electrical boards 1.11.3. Installation & repairing of circuit breakers 1.11.4. Installation of fancy lights 1.11.5. Installation and basic maintenance of household appliances 1.11.6. Installation and basic maintenance of kitchen appliances 1.11.7. Installation & repairing of the automatic switch of the Pump 1.11.8. Changing light bulb & tube light 1.11.9. Changing the capacitor of a fan	6	42
1.12. Energy Conservation & Sustainability 1.12.1. Methods 1.12.2. Advantages	1	3
	32	162

LIST OF PRACTICAL

ELECTRICAL

(For a Class of 15 students)

Sr. No.	Name of Practical
1.	To Practice Repairing of Electric Iron
2.	To Practice Repairing of Automatic Washing Machine
3.	Wiring of Electrical Instruments
4.	Wiring & Connections of Circuit Breakers
5.	Troubleshooting of Faults in Electrical Wiring
6.	Maintenance of Electrical Panels
7.	Troubleshooting of Electrical Appliances and its Maintenance
8.	Installation and Maintenance of Electrical Fixtures
9.	Making of Electrical Circuit Boards
10.	Introduction to Cables & Wires and its Jointing Methods

LIST OF PROJECTS

ELECTRICAL

(For a Class of 15 students)

Sr. No.	Name of Projects
1.	Electrical Wiring of a Room
2.	Electrical Wiring and Connection of Main DB
3.	Troubleshooting of Electrical Fault and its Corrective Action
4.	Troubleshooting and Corrective Action of Electrical Appliances
5.	Repair an Electric Iron
6.	Replace Capacitor in Fans

LIST OF TOOLS AND EQUIPMENT

ELECTRICAL

(For a class of 15 students)

Sr. No.	Name of tool/equipment	Quantity required
1.	Drill Machine	5
2.	Drill Machine (Hilti)	1
3.	Screw Driver (Flat 8")	15
4.	Screw Driver (Philips 8")	15
5.	Pliers	15
6.	Nose Pliers	15
7.	Electrical Cable 3/29	1 Coil
8.	Electrical Cable 7/29	1 Coil
9.	Electrical Cable 7/36	1 Coil
10.	Electrical Cable 23/76	1 Coil
11.	Electrical Cable 40/76	1 Coil
12.	Cable Cutter	15
13.	Wire Cutter	15
14.	Thimble Puncher	5
15.	Connector + Puncher	5
16.	LAN Cable Meter	1
17.	Hammer	15
18.	Tester	15

LIST OF CONSUMABLES

ELECTRICAL

(For a class of 15 students)

Sr. No.	Consumables	Quantity required
1.	Solder wire & flux	5
2.	Copper wires (Different gauges)	5 coils
3.	MCBs (Miniature Circuit Breakers)	5 each
4.	Continuity tester bulbs	5
5.	Cable ties (Different Sizes)	1 pack each
6.	Thimble (Different Sizes)	15 each
7.	Lamp holders & switches	15
8.	Plug tops & sockets	15
9.	PVC conduit pipes & bends (Different Sizes)	15 each
10.	Drill bits (in mm and inches.)	2 each
11.	Cable connectors & sleeves	2 each
12.	Cable markers & identification tags	1 pack

REFERENCE BOOKS

ELECTRICAL

- 1 “Electrical Wiring” by Azeem Academy
- 2 “Repair & Maintenance of Electrical Equipment” by Azeem Academy

Minimum Qualifications of Instructor and Lab Attendant

Instructor For Electrical

- Qualification: B.Sc. Electrical Engineering or Equivalent Engineering
- Experience: 2 Years of relevant experience

Lab Attendant for Electrical

- Qualification: Diploma in Electrical Technology or Equivalent Technology
- Experience: 4 Years of relevant experience

DETAILS OF COURSE CONTENTS

Building Maintenance Technician

(6-Month Course)

Details of Topics	Theory Hours	Practical Hours
2. PLUMBING		
2.1. Introduction to plumbing 2.1.1. Definition and scope of plumbing 2.1.2. Importance of plumbing in residential and commercial buildings	2	9
2.2. Introduction to Measurements 2.2.1. Understanding different measurement units in plumbing 2.2.2. Tools for measurement 2.2.2.1. Steel rule 2.2.2.2. Measuring tape 2.2.2.3. Spirit level 2.2.2.4. Vernier calliper 2.2.2.5. Proper spacing and leveling techniques	3	12
2.3. Introduction to the water supply system 2.3.1. Components of a water supply system 2.3.2. Types of water supply 2.3.3. Importance of water pressure and flow rates	1	6
2.4. Introduction to sewerage & drainage system 2.4.1. Difference between sewerage and drainage 2.4.2. Components of a drainage system 2.4.3. Proper slope and venting for effective drainage	1	6
2.5. Introduction to Gas Supply System 2.5.1. Components of a gas supply system 2.5.2. Safety regulations for gas pipelines 2.5.3. Leak detection methods	1	6

2.6. Plumbing tools & safety	2	9
2.6.1. Basic hand tools		
2.6.2. Power tools used in plumbing		
2.6.3. Safety precautions while handling plumbing tools		
2.6.4. Problems in plumbing and their solutions	3	18
2.7. Inspecting the Leakage and Fixing It		
2.7.1. Common causes of leaks		
2.7.2. Step-by-step guide to detecting leaks		
2.7.3. Temporary vs. permanent solutions		
2.8. Fixing Low Water Pressure		
2.8.1. Identifying the cause		
2.8.2. Methods to increase water pressure		
2.9. Dealing with Rust and Corrosion in Pipes		
2.9.1. Preventive measures		
2.9.2. Repair and replacement options		
2.10. Installations	4	18
2.10.1. Installation of the mirror		
2.10.2. Installation of accessories set in the washroom		
2.10.3. Installation of sanitary fittings		
2.10.4. Installation of stoves, geysers, and heaters		
2.10.5. Installation of sprinklers		
2.10.6. Installation of automatic washing machine		
2.11. Jointing	4	18
2.11.1. PPRC, HDPE, LDPE & IMPP pipes & fittings		
2.11.2. PVC pipes & fittings		
2.11.3. Threaded Pipes & Fittings		
2.12. Maintenance and services	3	18
2.12.1. Repairing taps		
2.12.2. Changing the spindle		
2.12.3. Repairing Muslim shower		
2.12.4. Repairing toilet tanks		
2.12.5. Removing blockages from baths, sinks, and shower wastes		

2.12.6. Water filter service		
2.12.7. Water tank service		
2.12.8. Geyser service		
2.12.9. General Maintenance of water pumps		
2.12.10. Cleaning and Servicing Floor Drains		
2.13. Repairing	2	15
2.13.1. Repairing of PPRC Pipes		
2.13.2. Repairing of PVC Pipes		
2.13.3. Repairing of IMPP Pipes		
2.14. Usage & Clamping	2	9
2.14.1. Clamping of PVC Flexible Pipes		
2.14.2. Usage of Seal		
2.14.3. Usage of Teflon Tape		
2.14.4. Sealing Pipe Joints with Thread Sealant		
2.15. Fusion Machine	2	12
2.15.1. Introduction of Fusion Machine		
2.15.2. Usage of Fusion Machine		
2.15.3. Maintenance of Fusion Machine		
2.15.4. Safety Precautions in the Usage of Fusion Machine		
2.15.5. Repairing of Fusion Machine		
2.16. Valves	2	6
2.16.1. Introduction to Main Valves		
2.16.2. Purpose of Main Valves		
2.16.3. Installation of Main Valves		
2.16.4. Repair and Replacement of Valves		
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LIST OF PRACTICAL

PLUMBING

(For a Class of 15 students)

Sr. No.	Name of Practical
1.	Using a steel rule for precise measurements
2.	Measuring distances accurately with a measuring tape
3.	Checking level and alignment with a spirit level
4.	Using a Vernier calliper for pipe diameter measurement
5.	Practicing proper spacing and leveling techniques for installations
6.	Mounting a mirror securely on different surfaces
7.	Installing washroom accessory sets (towel racks, soap dispensers)
8.	Fitting sanitary fixtures (washbasins, toilets, faucets)
9.	Installing gas appliances (stoves, geysers, heaters)
10.	Setting up sprinklers for water distribution
11.	Connecting an automatic washing machine to a water supply and drain
12.	Installation of Sanitary Items
13.	Jointing Techniques of Fresh Water Pipes and Fittings
14.	Jointing Techniques of Sewerage Water Pipes and Fittings
15.	Repairing PPRC pipes using fusion techniques
16.	Fixing damaged PVC pipes with solvent welding
17.	Repairing IMPP pipes using specialized tools
18.	Maintenance of Water Pump
19.	Troubleshooting of Water Supply System
20.	Maintenance of Sanitary Items
21.	Fixing a leaking tap
22.	Replacing a worn-out spindle in a faucet
23.	Repairing a malfunctioning Muslim shower
24.	Fixing a toilet tank flushing mechanism
25.	Clearing blockages in sinks, showers, and drains
26.	Servicing a water filter (cartridge cleaning/replacement)

27	Cleaning and maintaining a water tank
28.	Geyser servicing (descaling, pressure valve check)
29.	General maintenance of water pumps
30.	Cleaning and servicing floor drains
31.	Maintenance of Spindle, Tap, and other items

LIST OF PROJECTS

PLUMBING

(For a Class of 15 students)

Sr. No.	Name of Projects
1.	Installation & Fixing of Sanitary Items
2.	Wiring of a Washroom (Sewerage & Fresh Water Supply System)
3.	Wiring of a Kitchen (Sewerage & Fresh Water Supply System)
4.	Troubleshooting of Dampness / Moistness and its Corrective Action
5.	Troubleshooting of the Water Pump and its corrective Action
6.	Install a full set of washroom accessories (towel racks, soap holder, etc.)
7.	Replace or repair a toilet flush system

LIST OF TOOLS AND EQUIPMENT

PLUMBING

(For a class of 15 students)

Sr. No.	Name of tool/equipment	Quantity required
1.	Measuring Tape (3 meters and 5 meters)	15
2.	Measuring Tape Large (50 meters)	5
3.	Solution Tape	50
4.	Hole Cutter Set (mm and Inches)	2
5.	Screwdriver Set	2
6.	Adjustable Wrench	15
7.	Pipe Wrench	15
8.	Spanner Set (mm and inches)	2
9.	Allen Key Set (mm and inches)	5
10.	Fusion Machine (20mm-40mm)	5
11.	Fusion Machine Die Set (20mm, 25mm, 32mm & 40mm)	5
12.	Plastic Pipe Cutter	15
13.	Protective Gloves	15
14.	Protective Shoes	15
15.	Safety Helmet	15
16.	Facemask	15
17.	Tool Box	15
18.	Water Filter	1

LIST OF CONSUMABLES

PLUMBING

(For a class of 15 students)

Sr. No.	Consumables	Quantity required
1.	Plastic pipes of different sizes (PPRC, PVC, IMPP)	1 bundle each
2.	Plastic fittings of different sizes (PPRC, PVC, IMPP)	8 each
3.	GI pipes of different sizes	1 each
4.	GI fittings of different sizes	1 each
5.	Sanitary Fittings	3 each
6.	Wash Basin	1
7.	WC English & Indian	1 each
8.	Bolt kits for WC and washbasin	5 each
9.	Teflon Tapes	15
10.	Z connectors	15 set
11.	Connection Pipes	5 set
12.	Water filter cartridge	5
13.	Cleaning Chemicals	2 gallons
14.	Spindles (Plastic & Metal)	15 each
15.	Tap Nozzle and Filters	15 each
16.	Markers	15
17.	Cleaning Cloth	15

REFERENCE BOOKS

PLUMBING

- “Pipe Fitting & Plumbing” by Akhlaq Ahmad
- “PPRC Plumbing” by Khaliq Ahmad Minhas
- “Plumber” (trainee manual) by Muhammad Amjad Rafiq
- “Plumbing and Pipe Fitting” by NAVTTC

Minimum Qualifications of Instructor and Lab Attendant

Instructor For Plumbing

- Qualification: B.Sc. Civil Engineering or Equivalent Engineering
- Experience: 2 Years of relevant experience

Lab Attendant for Plumbing

- Qualification: Diploma in Civil, Plumbing or Equivalent Technology
- Experience: 4 Years of relevant experience

DETAILS OF COURSE CONTENTS

Building Maintenance Technician

(6-Month Course)

Details of Topics	Theory Hours	Practical Hours
3. HARDWARE		
3.1. Introduction to Basic Household Hardware 3.1.1. Understanding different types of hardware 3.1.2. Importance of quality materials	2	9
3.2. General safety and precautions 3.2.1. Personal protective equipment (PPE) 3.2.2. Safe handling of tools 3.2.3. Fire safety measures 3.2.4. First aid for minor injuries	2	9
3.3. Use of Basic Hand Tools 3.3.1. Screwdrivers 3.3.1.1. Flathead 3.3.1.2. Phillips 3.3.1.3. Trox 3.3.2. Pliers 3.3.2.1. Needle-nose 3.3.2.2. Slip-joint 3.3.2.3. Locking pliers 3.3.3. Level 3.3.3.1. Spirit level 3.3.3.2. Laser level 3.3.4. Screw Wrench 3.3.4.1. Adjustable wrench 3.3.4.2. Pipe wrench 3.3.5. Saw and Hand Hacksaw 3.3.5.1. Choosing the right blade	5	24

3.3.6. Use of wood Plane		
3.4. Use of Power Tools	4	24
3.4.1. Drill machine		
3.4.1.1. Cordless vs. Corded drills		
3.4.1.2. Drill bit selection		
3.4.2. Electric screwdriver		
3.4.3. Hand grinder		
3.4.3.1. Uses and safety precautions		
3.4.4. Circular saw		
3.4.4.1. Cutting different materials safely		
3.4.5. Heat gun		
3.4.5.1. Paint stripping		
3.4.5.2. Bending pipes		
3.4.5.3. Shrinking materials		
3.5. Use of fasteners	3	15
3.5.1. Nails		
3.5.1.1. Types and applications		
3.5.2. Screws		
3.5.2.1. Choosing the right screw for the job		
3.5.3. Bolts and nuts		
3.5.3.1. Different bolt head types		
3.5.3.2. Wall plugs		
3.5.3.3. Types and weight capacity		
3.5.4. Rivets		
3.5.4.1. When and how to use rivets		
3.5.5. Cable ties & clamps		
3.5.5.1. Organizing and securing cables		
3.6. Use of Adhesives	1	9
3.6.1. Silicone Sealants		
3.6.2. Glue		
3.6.2.1. Types of glue and their uses		
3.6.3. Epoxies (Elfi & Magic)		
3.6.3.1. Mixing and applying correctly		

3.7. Use of Brushes and Rollers for Paint Application 3.7.1. Choosing the right brush and roller	1	9
3.8. Installations & Repairs 3.8.1. Installation of wall clocks 3.8.2. Installation of wall hangings/paintings 3.8.3. Installation of kitchen accessories 3.8.4. Security Locks Installation 3.8.5. Door lock installation and repair 3.8.6. Door closer and door stopper installation & repair 3.8.7. Installation of laundry wires 3.8.8. Installation and repair of the drawer's railings and handle 3.8.9. Installation and repair of curtain railing 3.8.10. Pressure cooker handle and seal reinstallation 3.8.11. Repairing the handles of kitchen utensils 3.8.12. Refreshing grout in tiles 3.8.13. Replacing a damaged tile 3.8.14. General maintenance of the sewing machine 3.8.15. Wall Repairing 3.8.16. Cleaning of Wall 3.8.17. Anti-Termite Treatment 3.8.18. Repairing a Broken Chair or Table Leg	5	18
3.9. Servicing 3.9.1. Cleaning and General service of AC 3.9.2. Cleaning and General service of Fridge 3.9.3. Cleaning and General service of water dispenser 3.9.4. Cleaning and service of Automatic Washing Machine 3.9.5. Servicing and Maintenance of Ceiling & Exhaust Fans 3.9.6. Maintenance of Gas Stoves and Burners	2	15
3.10. Assembly and uninstallation of furniture 3.10.1. Step-by-step instructions for assembling common furniture	2	12

3.10.2. Proper disassembly for moving or storage		
3.11. Tool Handling		
3.11.1. Maintenance of tools	2	9
3.11.2. Right tool for the right job		
3.11.3. Inspection of tools		
3.11.4. Storage of tools		
3.11.5. Safe Handling of Electrical Tools		
3.12. Household hold hacks & DIY Ideas		
3.12.1. Making a Simple Wooden Shelf		
3.12.2. Fixing a Wobbly Table or Chair	3	9
3.12.3. Quick stabilizing techniques		
3.12.4. Creating a Home Tool Organizer		
3.12.5. DIY ideas for tool storage		
3.12.6. Removing Rust from Metal Tools and Fixtures		
3.12.7. Effective rust removal methods		
3.12.8. Waterproofing Wooden Surfaces		
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LIST OF PRACTICAL

HARDWARE

(For a Class of 15 students)

Sr. No.	Name of Practical
1.	Proper use of screwdrivers (flathead, Phillips, Torx, etc.)
2.	Use of adjustable wrench, socket wrench, and spanners
3.	Practice with measuring tape, spirit level, and marking tools
4.	Proper use of pliers (needle-nose, combination, locking, etc.)
5.	Safe handling and use of electric drill (for wood, concrete, and metal
6.	Use of electric screwdriver for fast installations
7.	Safe handling of jigsaw and hack saw for wood cutting
8.	Using an angle grinder for metal and stone work
9.	Drilling holes in concrete, drywall, and wood for various fittings
10.	Installing wall clocks, paintings, shelves, and wall hangings
11.	Fixing and replacing wall anchors and fasteners
12.	To practice installation of the wall clock and other wall hangings
13.	Installing and changing door locks (cylinder, mortise, and digital locks)
14.	Installing and adjusting door stoppers and door closers
15.	Installing and replacing door hinges
16.	Fixing and adjusting window latches and handles
17.	Installing and changing drawer railings (soft-close, ball-bearing)
18.	Replacing and installing catchers, cabinet handles, and hinges
19.	Installing and repairing laundry wires and drying racks
20.	Installing curtain rods, blinds, and curtain railings
21.	Fixing and replacing towel racks, bathroom holders, and hooks
22.	Reinstalling a pressure cooker handle and rubber seal
23.	Fixing or replacing damaged handles of kitchen utensils
24.	Removing old grout and refreshing tile grout
25.	Filling and repairing cracks in walls
26.	Patching holes in drywall or plaster

27.	Cleaning walls to remove stains, dust, and mold
28.	Applying anti-termite treatment to wooden surfaces
29.	Repairing a broken chair or table leg using glue, screws, or brackets
30.	Perform sewing machine maintenance (cleaning, oiling, and thread adjustments)
31.	Cleaning and servicing an air conditioner (filter cleaning, coil cleaning, gas level check)
32.	Cleaning and servicing a refrigerator (defrosting, cleaning condenser coils, unclogging drain)
33.	Cleaning and servicing a water dispenser (descaling, filter replacement)
34.	Cleaning and servicing an automatic washing machine (drum cleaning, checking hoses and filters)
35.	Cleaning and maintaining ceiling and exhaust fans (dust removal, lubrication, balancing)
36.	Cleaning and servicing gas stoves and burners (cleaning gas nozzles, fixing ignition issues)
37.	Assembling a bed frame or wardrobe
38.	Installing and adjusting cabinet doors and shelves
39.	Uninstalling furniture properly for moving or storage
40.	Labelling and organizing screws, bolts, and small parts for reassembly

LIST OF PROJECTS

HARDWARE

(For a Class of 15 students)

Sr. No.	Name of Projects
1.	Installation and changing of door lock
2.	Installation of curtain railings
3.	Fixing the swollen wood doors and windows using a carpenter's plane
4.	Installation and fixing of door closer
5.	Clean and repaint a section of a wall
6.	Fix a broken chair or table leg using glue, screws, or brackets
7.	Sand, polish, or repaint old furniture to restore its look
8.	Install new handles, hinges, and drawer railings
9.	Clean and service an air conditioner (filter, gas check)
10.	Drill holes and install it securely on a wall
11.	Change belt of washing machine
12.	Change belt of sewing machine

LIST OF TOOLS AND EQUIPMENT

HARDWARE

(For a class of 15 students)

Sr. No.	Name of tool/equipment	Quantity required
1.	Drill Machine	5
2.	Drill Machine (Hilti)	1
3.	Screw Driver (Flat 8")	15
4.	Screw Driver (Philips 8")	15
5.	Screw Driver (Torx)	15
6.	Screw Driver Precision set	5
7.	Pliers	15
8.	Nose Pliers	15
9.	Grip Pliers	15
10.	Hand Hacksaw	15
11.	Saw	15
12.	Wood Plane	15
13.	Measuring Tape (5 meters)	15
14.	Sprit level	15
15.	Hammer	15
16.	Rubber Hammer	15
17.	Utility Knife & Blades	15
18.	Electric Drill (With drill bits for wood, concrete, and metal)	5

19.	Electric Screwdriver (For fast installations)	5
20.	Angle Grinde	5
21.	Putty Knife (For crack filling & wall repair)	15
22.	Grout Removal Tool (Hand scraper or oscillating tool)	15
23.	Caulking Gun (For sealants & adhesives)	15
24.	Hole Cutter	5
25.	Paint Brush	15
26.	Paint Rollers	5
27.	Folding Ladder	2

LIST OF CONSUMABLES

HARDWARE

(For a class of 15 students)

Sr. No.	Consumables	Quantity required
1.	Wooden Block of different sizes	15 each
2.	Nails (Different Sizes)	1 pack each
3.	Screws (Different Sizes)	15 each
4.	Nut & Bolts (Different Sizes)	15 each
5.	Washers (Different Sizes)	15 each
6.	Drill Bits (Different Sizes)	2 each
7	Handles, hinges, and catchers	15 each
8.	Door Lock and parts	5 each
9.	Door closer and holders	5 each
10.	Glues (Different Types)	5 pack each
11.	Epoxies (Different Types like Elfi)	5 pack each
12.	Oil paint	2 pack
13.	Varnish	2 pack
14.	Kerosine oil	5 liters
15.	Water base paints	2 buckets
16.	Curtain Railings	5 each
17.	Pressure Cooker handles and rubbers	5 each

18.	Sewing machines needles	2 packs
19.	Sewing machine oil	5
20.	Sand Paper (Different Sizes)	5 each
21.	Markers	15
22.	Cleaning Cloth	15

REFERENCE BOOKS

HARDWARE

- “Woodworking: A Knowledge-Based Guide” by Asif Shabbir, Technical Education & Vocational Training Authority, Punjab
- “Workshop Practice” by Azeem Academy

Minimum Qualifications of Instructor and Lab Attendant

Instructor For Hardware

- Qualification: B.Sc. Mechanical Engineering or Equivalent Engineering
- Experience: 2 Years of relevant experience

Lab Attendant for Hardware

- Qualification: Diploma in Mechanical Technology or Equivalent Technology
- Experience: 4 Years of relevant experience

DETAILS OF COURSE CONTENTS

Building Maintenance Technician

(6-Month Course)

Details of Topics	Theory Hours	Practical Hours
4. INFORMATION AND COMPUTER TECHNOLOGY		
4.1. Introduction to Information Technology (IT) 4.1.1. Introduction to computer 4.1.2. Installation of computer wires 4.1.3. Turning on/off the computer 4.1.4. Safety & Precautions	2	10
4.2. Introduction to IT Tools 4.2.1. Cable cutter 4.2.2. General hardware tools 4.2.3. Network cable checking meter 4.2.4. Volt meter 4.2.5. Telephone cable puncher 4.2.6. Network cable puncher 4.2.7. Telephone and LAN cable connector	2	10
4.3. Computer Hardware and Software 4.3.1. Introduction to computer hardware 4.3.2. Checking of computer hardware 4.3.3. Introduction to computer software 4.3.4. Installation of computer software 4.3.5. Installation of OS (Operating System)	5	15
4.4. Networking 4.4.1. Introduction to the Networking 4.4.2. Installation of Internet cable/ LAN cable 4.4.3. Checking of LAN cable 4.4.4. Installation of telephone wires 4.4.5. Checking of telephone line	5	15

4.5. Introduction of Wi-Fi Router		
4.5.1. Setting the Wi-Fi router	5	15
4.5.2. Introduction to the power supply of adapter		
4.5.3. Checking the power supply of the adapter		
4.6. Introduction to Printer		
4.6.1. Installation of printer	2	10
4.6.2. Online/ Offline Printer		
4.6.3. Checking and refilling the toner of the printer		
4.7. Introduction to CCTV		
4.7.1. Introduction to Camera and DVR	7	15
4.7.2. Camera BNC and power checking		
4.7.3. Introduction to CCTV cable		
4.7.4. DVR setting		
4.7.5. Camera Installation		
	28	90

LIST OF PRACTICAL
INFORMATION AND COMPUTER TECHNOLOGY

(For a Class of 15 students)

Sr. No.	Name of Practical
1.	Use of Computer System
2.	Punching a Connector in LAN Cable
3.	Setting up Wi-Fi Router
4.	Writing CV, Letter, and Application in MS Word
5.	Troubleshooting of Hardware and its Installation
6.	Introduction to Computer Hardware
7.	Installation of Software and Drivers
8.	Windows Installation

LIST OF PROJECTS

INFORMATION AND COMPUTER TECHNOLOGY

(For a Class of 15 students)

Sr. No.	Name of Projects
1.	Installation of Windows, Software and Drivers
2.	Setting up a WI-FI Router
3.	Installation and Punching Connectors of LAN Cable and Telephone Cable
4.	Computer Hardware Installation
5.	CCTV Installation

LIST OF TOOLS AND EQUIPMENT
INFORMATION AND COMPUTER TECHNOLOGY

(For a class of 15 students)

Sr. No.	Name of tool/equipment	Quantity required
1.	Computers	15
2.	Projector	1
3.	Wi-Fi Router	1
4.	DVR	1
5.	Camera	2
6.	CCTV Cable	1
7.	12V Power Supply	2
8.	BNC Cable	4
9.	USB Drives	2
10.	External hard drive	1
11.	Printer	1
12.	Labeling Tape	5
13.	Markers	15
14.	Cleaning Cloth	15

LIST OF CONSUMABLES

INFORMATION AND COMPUTER TECHNOLOGY

(For a class of 15 students)

Sr. No.	Consumables	Quantity required
1.	LAN cable	50 feet
2.	LAN cable connectors	30
3.	CPU cells	15
4.	Paper A4 size	2 packs
5.	Wire Clamps (No.6 and No.8)	1 pack each

REFERENCE BOOKS

INFORMATION AND COMPUTER TECHNOLOGY

- “Computer Education” by Ghulam Rasool & Sons
- “Computer” by Punjab Textbook Board, Lahore

Minimum Qualifications of Instructor and Lab Attendant

Instructor For Information and Computer Technology

- Qualification: Bachelors in Computer, IT, or Software Engineering
- Experience: 2 Years of relevant experience

Lab Attendant for Information and Computer Technology

- Qualification: Diploma in Computer Technology or Equivalent Technology
- Experience: 4 Years of relevant experience

DETAILS OF COURSE CONTENTS

Building Maintenance Technician

(6-Month Course)

Details of Topics	Theory Hours	Practical Hours
5. PROFESSIONAL DEVELOPMENT		
5.1. What is professional development	2	
5.2. Identify professional development needs	2	
5.2.1. Identify Training Programs		
5.2.1.1. Industry Training		
5.2.1.2. On Job Training		
5.2.1.3. Personal Development		
5.2.2. Create Personal Development Plans		
5.2.3. Set Clear Goals & Objectives		
5.3. Develop professional knowledge, skills, and attitudes	3	
5.3.1. Communication Skills		
5.3.2. Problem-Solving Techniques		
5.3.3. Having A Positive Attitude & Service Mindset		
5.3.4. Self-Motivation & Self-Confidence		
5.3.5. Professionalism		
5.3.6. Teamwork		
5.4. Maintain professional proficiency	1	
5.4.1. Continuing Education Programs		
5.4.2. Professional Certifications		
5.5. Professional Behaviors	1	
5.6. Work Ethics	2	
5.6.1 After Service / Maintenance Steps		
5.6.1.1. Starting of Job		
5.6.1.2. During Job		
5.6.1.3. After Completion of Job		
5.7. Professional development in career growth	1	
5.7.1. Focus On Long-Term Goals		

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REFERENCE BOOKS

PROFESSIONAL DEVELOPMENT

- “The 7 Habits of Highly Effective People” Book by Stephen Covey
- “Leading & Managing Continuing Professional Development: Developing People, Developing Schools” Book by Peter Earley and Sara Bubb

Minimum Qualifications of Instructor and Lab Attendant

Instructor for Professional Development

- Qualification: B.A /BSc in Education or a relevant field
- Experience: 2 Years of relevant experience

LIST OF LABS

(For a Class of 15 Students)

Sr. No	Name of labs/Workshops
1	Plumbing Lab.
2	Electrical Lab.
3	Hardware workshop
4	Computer Lab.

LIST OF FURNITURE

(For a class of 15 students)

Sr. No.	Name of tool/equipment	Quantity required
1.	Student chairs with arm desk	15
2.	Teacher Table	1
3.	Teacher's Chair	1
4.	Computer Tables	15
5.	Computer Chairs	15
6.	White Board	1
7.	Wooden Stool	15
8.	Work Bench	15

JOB MARKET & CAREER PLACEMENT

Building Maintenance Technician is a crucial skill that ensures the proper upkeep of homes, buildings, and facilities. With an increasing demand for skilled workers in this field, many job opportunities are available in both residential and commercial sectors. Individuals who complete a building maintenance technician course can find employment in roles such as:

- Maintenance technicians
- Facility supervisors
- Handyman services
- Home improvement specialists

One of the most common job roles is that of a house maintenance technician, responsible for repairing:

- Electrical
- Plumbing
- Home Appliances
- Structural issues in homes and apartments

In conclusion, the demand for building maintenance technician continues to grow, creating numerous job opportunities in different industries. Whether working for a company, running an independent business, or joining a government organization, individuals with building maintenance technician skills have a wide range of career paths to explore.

Curriculum Development Committee

- | | |
|--|-----------------|
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Tariq Pipe Industries (Pvt.) Ltd., Gujranwala
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DBOM PVTC, Gujranwala
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