CURRICULUM FOR SIX MONTH CERTIFICATE COURSE

IN

FITTING & PLUMBING

UNDER DEVELOPMENT

Prepared By

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SIX MONTH CERTIFICATE COURSE

IN

FITTING & PLUMBING

Sl. No.	Module	Duration
1.	Module 1	12 weeks
2.	Module 2	12 weeks

MAIN FEATURES OF THE CURRICULUM

1. Title of the Course : Certificate course in **FITTING & PLUMBING**
2. Duration of the Course : Six Month
3. Type of the Course : Full Time Institutional

SYLLABUS FOR FITTING &PLUMBING

MODULE:1

THEORY

1. **Introduction to Tools & Equipment:**
    * Hand tools of the trade
    * Stock and dies
    * Pipe vice
    * Bench vice
    * Blow lamp stove
    * Ferrule m/c
    * Bending m/c
2. **Documentation :**
    * Glossary of terms
    * Basic engineering drawings / sketches
    * Info sheets / job cards
    * Time sheets
    * Record book / log book
    * Store requisition
3. **Basic Materials :**
    * Galvanized pipes
    * Cast iron pipes
    * PVC pipe
    * SW pipes
    * Fittings
    * Fixtures
    * Solder / Lead
4. **Testing :**
    * Water test
    * Pressure test
    * Smoke test
    * Ball test

Practicals :

1. Taps & Valves :

* Understanding working principles
* Understanding methods of testing
* Use of basic tools and bench vice
* Selection of taps and valves
* Dismantling taps & valves
* Inspecting glands, washer
* Assembling taps and valves in position
* Ensuring no leaks when tested
* Safety
* Site tidiness

2. Cutting / Threading / Bending / GI Pipes :

* Use of hand tools
* Use of cutting tools
* Use of bending machine
* Use of pipe Dies & Vice
* Lubrication
* Understanding basic sketches & drawing
* Mark out and cut to size
* Threading and bending
* Awareness of tolerance
* Safety
* Site tidiness

3. Jointing / Assembling GI Pipes :

* Understanding types of pipes & fittings
* Understanding methods of joining
* Use of chain wrench
* Interpretation of sketches & drawings
* Joining and assembling GI pipes with supplied fittings
* Importance of line & level
* Awareness of tolerance
* Safety
* Site tidiness

4. PVC Pipe Bending :

* Understanding types of PVC pipes and fittings
* Understanding methods of bending
* Use blow lamp & flame control
* Interpretation of sketches & drawings
* Mark out and cut to size
* Bend PVC pipes
* Importance of line & level
* Awareness of tolerance
* Safety

* Site tidiness

5. PVC Jointing :

* Understanding types of PVC pipe joints
* Understanding methods of jointing
* Use of hand tools
* Use of beveling reamer
* Use of blow lamp & flame control
* Application of solvents
* Assembly methods
* Interpretation of sketches & drawings
* Join PVC pipe
* Importance of line & level
* Awareness of tolerance
* Safety
* Site tidiness

6. S.W. Pipe laying / jointing :

* Understanding types of SW pipe
* Understanding methods of laying / jointing
* Use of hand tools
* Use of sight rails
* Assembly methods
* Interpretation of sketches & drawings
* Importance of gradient / alignment
* Understanding self cleansing gradients
* Join SW pipe
* Testing methods
* Awareness of tolerance
* Safety
* Site tidiness

MODULE:2

1. Basic Materials :

* Galvanized pipes
* Cast iron pipes
* PVC pipe
* SW pipes
* Fittings
* Fixtures
* Solder / Lead

2. Testing :

* Water test
* Pressure test
* Smoke test
* Ball test

3. Safety :

* Health & Safety
* Eye protection
* Hand & Foot protection
* Overall personal safety
* Moving
* Lifting
* Carrying
* Stacking
* Working at heights (Ladders / scaffold)
* Electricity

Practicals :

1. Cast Iron Cutting / Jointing :

* Understanding methods of cutting
* Use of hand tools
* Interpretation of sketches & drawings
* Importance of alignment
* Understanding methods of jointing
* Use of chain wheel
* Introduction to gasket
* Handling lead
* Testing methods
* Awareness of tolerance
* Safety
* Site tidiness

2. Alkathene flanging / Jointing :

* Understanding Alkathene Flange
* Forming tools
* Assembly methods
* Types of fittings
* Connecting Alkathene to G.I. pipe
* Interpretation of sketches & drawings
* Importance of alignment
* Understanding methods of jointing
* Testing methods
* Awareness of tolerance
* Safety
* Site tidiness

3. Making service connections :

* Understanding service connections
* Understanding ferrules, water meter
* Introduction local authority by-laws
* Connect cast iron main with domestic service
* Using ferrule, valve and water meter
* Testing methods
* Safety
* Site tidiness

4. Connecting house sewer to main :

* Understanding sewer connection to main
* Understanding interceptor traps
* Introduction local authority by-laws
* Connect interceptor manhole with main sewer using SW pipes
* Testing methods
* Safety

* Site tidiness

5. Fixing Sanitary Fixtures :

* Understanding, handling, lifting sanitary fixtures
* Care in fitting and leveling
* Introduction local authority by-laws
* Fix low level water closet
* Connect to soil stack, seal connections
* Testing methods
* Safety
* Site tidiness

6. Installing Water Pump, connecting supply pipe :

* Understanding handling water pump
* Understanding working principle of Water pump and foot valve
* Methods of connections
* Connect pump to pump base
* Connect supply pipes, foot valves, etc.
* Care in fitting and leveling
* Introduction local authority by-laws
* Testing methods
* Safety
* Site tidiness

7. Skill Consolidation Installation Work Project :

* Interpretation of working drawings
* Types of sanitary fixtures and appliances
* Storage cistern, tanks
* Understanding local authority by-laws
* Distribution water supply pipe connections
* Position install sanitary fixtures and appliances
* Testing methods
* Safety
* Site tidiness

List of Tools and Equipments (for batch of 16 student)

Sr. No.	Items	Quantity
1.	Rule steel 300 mm both in inch and mm	1 no.
2.	Rule wooden 4 fold. 600 mm	1 no.
3.	Hacksaw frame adjustable for 250 to 300 mm	1 no.
4.	Scriber 200 mm	1 no.
5.	Centre punch 100 mm	1 no.
6.	Chisel Cold flat 20 mm	1 no.
7.	Hammer ball pein 800 grams	1 no.
8.	Hammer ball pein 50 grams	1 no.
9.	File flat rough 300 mm	1 no.
10.	Level spirit wooden 300 mm	1 no.
11.	Plumb bob 50 grams	1 no.
12.	Trowel C- 125-IS : 6013	1 no.
13.	Stilison wrench 200 & 350 mm	1 each
14.	Screw driver 50 mm	1no.
15.	Wooden Mallet small IS : 2022	1 no.
16.	Cutting pliers 200 IS : 3650	1 no.
17.	Steel tape	1 no.

List of Materials Required (for batch of 16 student)

Sr. No.	Items	Size
1.	G.I. Pipe “B” (I.S.I.)	½”
2.	- do -	¾”
3.	- do -	1”
4.	P.V.C. Pipe	
5.	C.I. Pipe	3”
6.	- do -	100mm
7.	S.W.G. pipe	4”
8.	A.C. pipe	100mm
9.	G.I. Socket	½”, ¾”,1”
10.	G.I. Reducing Socket	½”x ¾”, ½”x1”, ¾”x1”
11.	G.I. Elbow	½”, ¾”, 1”
12.	G.I.R. Elbow	½”x ¾”, ½”x1”, ¾”x1”
13.	G.I. Tee	½”, ¾”, 1”
14.	G.I.R. Tee	½” x ¾”, ½” x 1”
15.	G.I. Union	½”, ¾”, 1”
16.	G.I. Bend	½”, ¾”
17.	G.I. Flange	2”
18.	G.I. Jam Nut	½”, ¾”, 1’’
19.	Stop Cock G.I. and Brass	½”
20.	Bile Cock C.I. , Brass and P.V.C.	½”
21.	Gate Valve	½”
22.	Wheel Valve	½”
23.	W.C. Indian	
24.	W.V. European	
25.	Sinks	
26.	Wash Basin	630x450 mm

27.	Flushing cisterns	
28.	Hack Saw Blade	½” x 12”
29.	G.I. Nipple	½” x 2”, ½” x 4”, ½”x 6, ½”x 9”
30.	“ S” Trap	1 x ¼”
31.	“P” Tap	4”