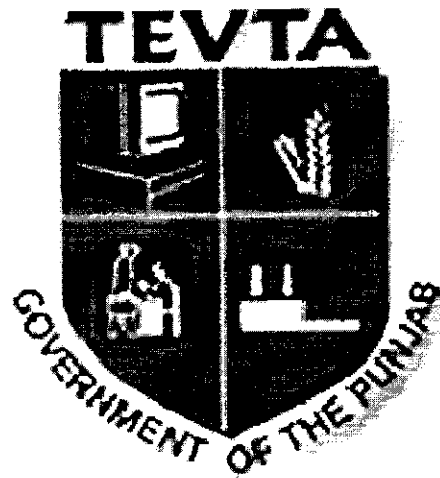


GOVERNMENT OF THE PUNJAB
TECHNICAL EDUCATION & VOCATIONAL
TRAINING AUTHORITY



CURRICULUM FOR

PLUMBER

(6 – Months Course)

Revised April 2016

APPROVED

Date: 7-4-16

Sign: 

CURRICULUM SECTION
ACADEMICS DEPARTMENT

96-H, GULBERG-II, LAHORE

Ph # 042-99263055-9, 99263064

gm.acad@tevta.gop.pk, manager.cur@tevta.gop.pk

TRAINING OBJECTIVES

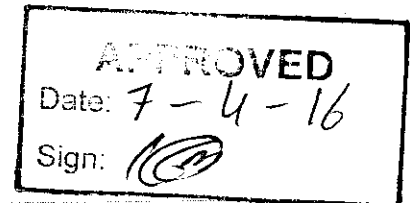
Main objective of this course is to produce workforce, keeping in view the local market demand & industrial requirements.

This curriculum is developed also keeping in view the requirements of market demand by more focusing on practical and necessarily required theoretical knowledge along with new subjects of Functional English & Information Technology.

The curriculum covers the major topics of common hand tools & equipments used for domestic / industrial plumbing systems, planning and installation of sanitary installations, fault finding and its rectification by observing safety rules, installation of drainage / sewerage systems, repair / maintenance of water lifting pumps, installation / pair of common gas appliances.

CURRICULUM SALIENTS

Name of course	:	Plumber
Entry Level	:	Middle
Total duration of course	:	6 Months
Total Training Hours	:	800 Contact Hours
Training Methodology	:	Practical 80%
		Theory 20%
Medium of Instruction	:	Urdu/ English



SKILL COMPETENCY DETAILS

On successful completion of this course the trainee should be able to:-

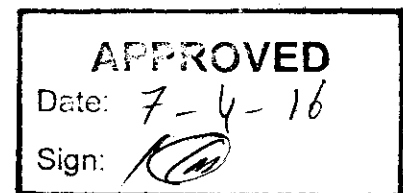
1. Do the Filing, marking, measuring, sawing & drilling of metals.
2. Cut, ream and thread steel pipes.
3. Join galvanized pipe, Copper pipe, Plastic pipe & Cast Iron pipe.
4. Plan and install Bath Room installation in a house.
5. Make house connection from main city water line.
6. Lay down Drainage / Sewerage system of a house.
7. Install and repair gas meter, water heater & cooking range etc.
8. Prepare an estimate of simple sanitary installation of a house.
9. Repair / maintain the valves, faucets & Mixtures / Fixtures.
10. Repair / maintain the water pumps.

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KNOWLEDGE PROFICIENCY DETAILS


On successful completion of this course, the trainee should be able to:-

1. Explain the personal, tools & work safety.
2. Explain the working drawing, sketches and basic plumbing / sanitary installation symbols.
3. Explicate the application of measuring, marking, filing, sawing tools & instrument used.
4. Explain the use of threading dies & other threading instruments.
5. Explain the plumbing / sanitary installation tools.
6. Express the plumbing & sanitary installation regulations / standards applicable.
7. Explicate the plumbing fixtures, fittings & tell their Applications.
8. Describe the types, use & function of valves, cocks, and taps.
9. Explain the plan & estimation of simple plumbing works for single storey house.
10. Explicate the types, function & repair of water pumps.



SCHEME OF STUDIES**Plumber
(6 - Months Course)**

S.No	Main Topics	Theory Hours	Practical Hours	Total Hours
1.	Basic Metal Work	32	60	92
2.	Pipe fittings	28	200	228
3.	Mathematics	20	0	20
4.	Technical Drawing	20	0	20
5.	Sanitary Installations and Repair / Maintenance of pumps	36	284	320
6.	I.T Fundamentals	8	32	40
7.	Functional English	16	64	80
Total		160	640	800

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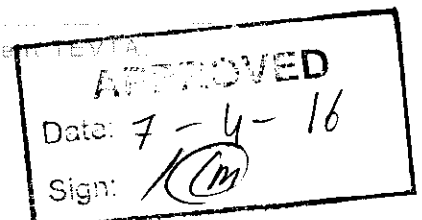
DETAIL OF COURSE CONTENTS
Plumber
 (6 – Months Course)

S. No.	Detail of Topics	Theory Hours	Practical Hours
1.	Basic Metal Work 1.1. Introduction (Workshop, Work Place, Tools) 1.1.1. Order of workplace 1.1.2. Introduction to general tools used in the metal workshop, their care and proper use 1.1.3. Safety precautions 1.2. Measuring (General Introduction) 1.2.1. Purpose of measuring and checking tools 1.2.2. Accuracy of measuring 1.2.3. Linear measuring (steel rules, calipers, vernier calipers) 1.2.4. Measuring Faults 1.2.5. Care and Maintenance of Measuring tools 1.3. Marking 1.3.1. Necessity of marking 1.3.2. Common marking tools (scriber, steel rule, & centre punch) 1.4. Filing 1.4.1. Process of filing 1.4.2. Types of files with regards to cut and shape 1.5. Sawing 1.5.1. Cutting principle (rake angle)	32	60

	<p>1.5.2. The saw blade (pitch of teeth, setting of teeth and tightening the blade in the frame)</p> <p>1.6. Drilling</p> <p>1.6.1. Drilling of through holes (effect of movements of the drill, cutting process)</p> <p>1.6.2. Main parts (their name and function)</p> <p>1.6.3. Clamping and removing of twist drills</p> <p>1.6.4. Drilling faults</p> <p>1.7. Reaming</p> <p>1.7.1. Purpose and process of reaming</p> <p>1.7.2. Types of reamers (Hand reamers, machine reamers and adjustable reamers)</p> <p>1.8. Counter Sinking and Counter boring</p> <p>1.8.1. Counter sinking tools, purpose and procedure</p> <p>1.8.2. Size / No. of Counter bore</p> <p>1.9. Filing Exercise – I</p> <p>1.9.1. Filing of Channel</p> <p>1.10. Marking Exercise</p> <p>1.10.1. Flat Filing</p> <p>1.10.2. Marking</p> <p>1.10.3. Center Punching</p> <p>1.11. Filing Exercise – II</p> <p>1.11.1. Flat Filing</p> <p>1.11.2. Square Filing</p> <p>1.12. Sawing Exercise</p> <p>1.12.1. Sawing and Square Filing within size</p> <p>1.13. Sheet Metal Box – I</p>		
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	1.13.1. Filing 1.13.2. Marking 1.13.3. Shearing 1.14. Drilling Exercise 1.14.1. Marking 1.14.2. Center Punching 1.14.3. Drilling 1.14.4. De burring		
2.	Pipe Fittings		
	2.1. Steel Pipe	2	200
	2.1.1. Kinds of steel pipes		
	2.1.2. Nominal Sizes & length		
	2.2. Pipe Fitting	2	-
	2.2.1. Pressure / Drainage Fittings		
	2.2.2. Fitting Specifications		
	2.3. Characteristics of Pipes	4	-
	2.3.1. Properties		
	2.3.2. Rust / Corrosion		
	2.3.3. Chemical Resistance		
	2.3.4. Expansion / Heat Resistance		
	2.4. Characteristics of Pipes	4	-
	2.4.1. Advantages / Disadvantages		
	2.4.2. Comparatively analysis		
	2.5. Plumbing Symbols	4	-
	2.5.1. Importance of Pipe Symbols		
	2.5.2. Symbols definition		
	2.6. Pipe Threads	2	-
	2.6.1. BSP threads		
	2.6.2. Threads taper & angle		
	2.6.3. Threads engagement		
	2.6.4. Threads Per Inch		

2.7.	Joining Methods of pipes, Steel, Cast Iron, Copper, Plastic & A.C Pipes	4	-
2.8.	Installing & supporting of pipes		
2.8.1.	Hangers and devices	2	-
2.8.2.	Positioning and aligning		
2.8.3.	Corrosion protection		
2.9.	Public Water Supply System		
2.9.1.	Natural and Pumps Gravity	2	-
2.9.2.	Municipal Water Supply		
2.9.3.	Public Water Tanks		
2.10.	House Water Connection		
2.10.1.	Service Line	2	-
2.10.2.	Distributor		
2.10.3.	Risers Branches		
2.10.4.	Fixture Lines		
2.11.	Pipe Fitting Exercise		25
2.11.1.	Measuring, marking, cutting, Reaming & cutting threads as per drawing	-	25
2.12.	Cold Water Installation - I	-	
2.12.1.	Measuring, marking, cutting, reaming, threading, joining, fixing & testing		
2.13.	Cold Water Installation - II	-	20
2.13.1.	Measuring, marking, cutting, reaming, threading, joining & fixing		
2.14.	Cold and Hot Water Installation - I	-	
2.14.1.	Measuring, marking, cutting, reaming, threading, joining, locating & fixing		25
2.15.	Cold and Hot Water Installation - II	-	
2.15.1.	Measuring, marking, cutting, reaming, threading, joining, locating & fixing		25



	<p>2.16. House Water connection 2.16.1. Install Water Meter along with non return valve 2.16.2. Connect main water supply to the service line of house</p> <p>2.17. Building Storage Tank Installation 2.17.1. Install supply pipes to storage tank 2.17.2. Connect distributor / branches</p>	<p>-</p> <p>-</p>	
<p>3.</p>	<p>Mathematics</p> <p>3.1. Whole Numbers 3.1.1. Addition and subtraction</p> <p>3.2. Whole Numbers 3.2.1. Multiplication and division</p> <p>3.3. Friction 3.3.1. Proper friction, Improper friction</p> <p>3.4. Decimal System 3.4.1. Meter, Gram & Liter</p> <p>3.5. Decimal System of Measurement 3.5.1. Multiples & parts of units</p> <p>3.6. Decimal Fraction 3.6.1. Addition and subtraction</p> <p>3.7. Decimal Fraction 3.7.1. Multiplication & Division</p> <p>3.8. Decimal Fraction 3.8.1. Addition and subtraction, Multiplication & Division</p> <p>3.9. Percentage 3.9.1. Number of base finding</p> <p>3.10. Angles 3.10.1. Angles & its units (Degree, Minutes, Second)</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	

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	3.11. Angles 3.11.1. Expressing value of angle in decimal	1	
	3.12. Angles 3.12.1. Expressing of angle in decimal form.	1	
	3.13. Surface Area 3.13.1. Calculation of the area of composed surface	2	
	3.14. Area 3.14.1. Area of rectangle	2	
	3.15. Speed of flow 3.15.1. Discharge of water from pieces	2	
	3.16. Pressure 3.16.1. Hydraulic pressure	2	
4.	Technical Drawing		
	4.1. Introduction of technical drawing 4.1.1. Kind of lines 4.1.2. Drawing instrument	1	
	4.2. Introduction of Technical Drawing 4.2.1. Lettering exercise	1	
	4.3. Prismatic Work 4.3.1. Representation in cavalier projection	1	
	4.4. Prismatic Work 4.4.1. cavalier projection	1	
	4.5. Views Prismatic Work Piece 4.5.1. Representation of 3 views	2	
	4.6. Views of Prismatic Work Piece 4.6.1. Representation of 3 views	2	
	4.7. Prismatic Work Piece 4.7.1. Assembly body of recognition of vies	2	
	4.8. Prismatic Work Piece 4.8.1. Assembling		


	4.9. Dimension	2	
	4.9.1. Dimension Symbols		
	4.9.2. Various pipe & fitting symbols	4	
	4.10. Water Installation		
	4.10.1. Line diagram of hot & cold water line.	3	
	4.11. Projection Plan	1	
5.	Sanitary installation & Repair/ Maintenance		
	5.1. Wash basin installation		15
	5.1.1. Measuring, marking, cutting threads, joining, clamping, hanging wash basin		
	5.2. Shower installation		15
	5.2.1. Measuring, marking, cutting threads, joining, leveling, clamping		
	5.3. W.C installation (Asian type)		15
	5.3.1. Measuring, marking, cutting threads, joining, leveling, clamping		
	5.4. W.C installation (European type)		15
	5.4.1. Measuring, marking, cutting threads, joining, leveling, clamping.		
	5.5. Bath tub installation		15
	5.5.1. Measuring, marking, cutting, threading, joining, clamping		
	5.6. Sink installation		15
	5.6.1. Measuring, marking, cutting, threading, joining, clamping		
	5.7. Bath room installation – I		15
	5.7.1. Preparation of working drawing		
	5.7.2. Prepare a list of material		
	5.7.3. Estimate working time and cost		
	5.7.4. Install pipe line & test (line pressure)		20
	5.7.5. Install the drainage line		

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5.7.6.	Fit the sanitary ware		
5.8.	Drainage line installation - I		
5.8.1.	Measuring, marking, cutting, joining, grading & leveling		
5.9.	Drainage line installation - II		
5.9.1.	Measuring, marking, cutting, joining, grading & leveling		15
5.10.	Gas heater installation		
5.10.1.	Measuring, marking, cutting, joining, checking		20
5.11.	Repair & Maintenance		
5.11.1.	Repairing of pumps		
5.11.2.	Repairing of gland bush		15
5.11.3.	Repairing of valves		
5.12.	Control valves		
5.12.1.	Valves material		20
5.12.2.	Automatic / non automatic valves		
5.12.3.	Locations		
5.13.	Control valves		
5.13.1.	Function of Gate Valve, Globe Valve, Ball Valve, Check Valve & Relief Valve.	4	15
5.13.2.	Effects of water flow.		
5.14.	Flushing devices		
5.14.1.	Flushing tanks		
5.14.2.	Flushing valves	4	15
5.14.3.	Locations		
5.15.	Flush tanks		
5.15.1.	Low level		
5.15.2.	High level		
5.16.	Domestic water supply	4	10
5.16.1.	Minimum flow pressure		

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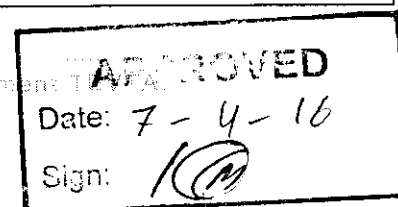
	5.16.2. Flow rate (m/s)		
	5.16.3. Sizing water supply		
5.17.	Domestic water supply	4	10
	5.17.1. Sizing water supply system		
5.18.	Planning domestic water supply		
	5.18.1. Rules for supply piping	4	
	5.18.2. Flow back Siphon age and cross connection	2	
5.19.	Planning domestic water supply		
	5.19.1. Rules for supply piping	4	2
	5.19.2. Service lines		
	5.19.3. Branch lines		15
	5.19.4. Fixture lines	4	
5.20.	Testing of water supply		10
	5.20.1. Testing method		
	5.20.1.1. Manual testing		
	5.20.1.2. Hydraulic testing		12
5.21.	Waste disposal system	2	
	5.21.1. Waste disposals		
	5.21.2. Sewerage system		
	5.21.3. Materials	4	15
Total		136	544

LIST OF PRACTICALS

Name of Trade	Plumber
Duration of Course	06-Months

Sr. No.	Name of Practical's
1.	Measuring the job according to Drawings / size
2.	Practice for pipe cutting with saw and pipe cutter
3.	Practice for drilling the hole
4.	Practice for clamping and twisting the drill
5.	Practice for reamer
6.	Practice for use of counter sinking tools
7.	Practice for filling and Marking
8.	Practice for use of center punch
9.	Practice for jointing of cast iron pipes
10.	Practice for jointing of plastic and Rubber pipes
11.	Practice for jointing of Copper pipes
12.	Practice for jointing of PPRC pipes
13.	Practice for G.I. pipes
14.	Practice for threading on PPRC and G.I. pipes
15.	Practice for taking connections for Water supply from main line
16.	Practice for hot and cold water piping for a washroom / cabin
17.	Practice for connection for storage reservoir
18.	Practice for connection and fixing of geezer
19.	Practice for connection of different pumps
20.	Practice for fixing of wash hand basin

Developed by: Mr. Anil Kumar, Section In-charge, Academics Department, T. T. A.



21.	Practice for fixing of W.C. (English & European)
22.	Practice for fixing of shower
23.	Practice for fixing and changing of mixer
24.	Practice for Repairing of different valves
25.	Practice for Repairing of hand pumps

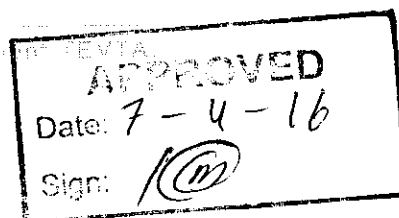
SCHEME OF STUDIES**I.T. Fundamentals**

S.No	Main Topics	Theory Hours	Practical Hours	Total Hours
1.	Introduction to Computers	2	6	8
2.	Typing - Microsoft Word	4	14	18
3.	Internet & Electronic Mail	2	12	14
Total		8	32	40

DETAIL OF COURSE CONTENTS
I.T Fundamentals


S. No	Detail of Topics	Theory Hours	Practical Hours
1	<p>Introduction to Computers</p> <p>1.1 What is a computer- Definition, functions and general features?</p> <p>1.2 What is Hardware – 1.2.1 Computer parts and units 1.2.1.1 Input Unit - Keyboard, Mouse etc. 1.2.1.2 Central Processing Unit 1.2.1.3 Output Unit</p> <p>1.3 What is Software – 1.3.1 Electronic Parts of a Pc it is 1.3.1.1 Software and Its types 1.3.1.2 System Software, Application software and its functions</p> <p>1.4 Working with windows Operating System 1.4.1 How does windows desktops work? 1.4.2 Setting desktop, background and wall papers etc. 1.4.3 Viewing directories – List of files and folders different styles.</p> <p>1.5 What are the Icons, Shortcuts and other graphic, 1.5.1 How to see computer contents on different drives etc.</p>	2	6
2	<p>Typing and Word processing (MS Word)</p> <p>2.1 Proper way of typing correct and speedy - getting familiar with the keys</p> <p>2.2 Where to type in computer? How to save a file? How to get it back? Where to find your saved work?</p> <p>2.3 Formatting in MS Word Bold, Italic, page setup, setting shades and colors.</p> <p>2.4 Working with saved work, opening and moving</p>	4	14

Unit of ... Academic Department



Plumber (6-Months)

	files.		
	2.5 How to get it printed?		
3	Emailing and Internet Surfing	2	12
	3.1 How to go to Internet, what is required for an internet connection etc.		
	3.2 How to use email? How to search on web? Etc		
	3.3 How to make new email account, login and logout an email account etc.?		
	3.4 Downloading and uploading attachments etc.		
Total		8	32

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LIST OF PRACTICALS
I.T Fundamentals

S. No.	Name of Practical
1.	Turn On/Off and setting of power supply
2.	Accessing The Desktop
3.	Using of Icons and Shortcuts
4.	Setting / customizing the desktop
5.	Viewing the contents of computer – Directory
6.	Setting the view of a folder
7.	Copying, Deleting and Moving Files in a folder
8.	Working with different Applications
9.	Opening MS Word for typing
10.	First lesson of Typing A S D F
11.	Second Lesson of typing J K L ;
12.	Third Lesson U I O P
13.	Fourth Lesson R E W Q
14.	Fifth Lesson N M , .
15.	Sixth Lesson V C X Z
16.	Seventh Lesson All letter using R index Finger
17.	Eighth Lesson All letter using L index Finger
18.	Formatting in MS Word Bold, Italic etc.
19.	Page Setting/ Page Layout
20.	Using Internet
21.	Opening Email, making new account


Approved by Director, Sector Academics Department TEVTA

7-4-16



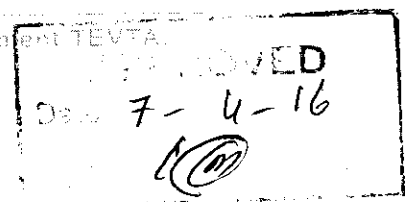
Plumber (6-Months)

22.	Sending Receiving Emails
23.	Downloading and uploading attachments etc.

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SCHEME OF STUDIES
Functional English

S.No	Main Topics	Theory Hours	Practical Hours	Total Hours
1.	Use of past indefinite tense	2	6	8
2.	Use of 'was' 'were' ' questions and negatives	3	6	8
3.	Explaining a situations/ analysis	2	6	8
4.	Communication in writing	2	6	8
5.	Comprehension	1	6	7
6.	Application/ C.V.	1	6	7
7.	Dialogues	1	9	10
8.	Understand vocabulary	1	3	4
9.	Writing complaints/ answers to complaints	1	9	10
10.	Interviews	2	7	10
Total		16	64	80



DETAIL OF COURSE CONTENTS
Functional English

S. No	Detail of Topics	Theory Hours	Practical Hours
1	Use of past indefinite tense 1.1 Describing past events	2	6
2	Use of 'was' 'were' ' questions and negatives	2	6
3	Explaining a situations/ analysis 3.1 Making a plan 3.2 Visiting factory area 3.3 Giving justifications	2	6
4	Communication in writing 4.1 Asking for list of stationery items 4.2 Submitting report of performance of team of technicians 4.3 Submitting joining report	2	6
5	Comprehension: practice sets	2	6
6	Job application/C.V.	1	6
7	Dialogues	1	9
8	Understand vocabulary	1	3
9	Writing complaints/ answers to complaints	1	9
10	Interviews	2	7
Total		16	64

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LIST OF PRACTICALS
Functional English

S. No.	Practical
1.	Group discussion
2.	Interviews
3.	Role play

Approved by: [Signature] Section: Academics Department (TEVT)

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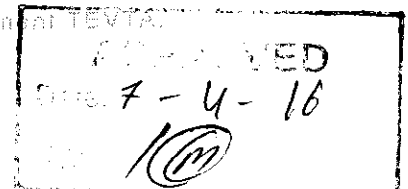
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LIST OF LABS**Plumber**

- Plumbing Lab / Workshop
- Drawing Hall

I.T Fundamentals

- Computer Lab



LIST OF TOOLS AND EQUIPMENT

(For a class of 25 students)

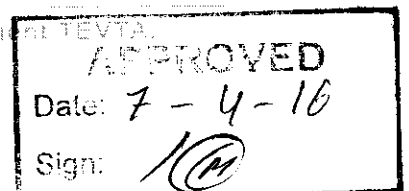
Name of Trade	Plumber
Duration of Course	06-Months

Sr. No.	Name of Tools / Equipments	Quantity
1.	Work Bench with Bench Vice 6"	02 Nos.
2.	Flat File (300 X 1)	25 Nos.
3.	Steel Foot Rule 12"	25 Nos.
4.	Steel Measuring Tape (3meter / 10 ft.)	25 Nos.
5.	Ball Peen Hammer ½ Kg	12 Nos.
6.	Tap and Die set 06mm to 12mm	04 set.
7.	Pipe Wrench 12" – 14" – 18"	12, 12 & 12Nos.
8.	Chain Pipe Wrench 24"	04 Nos.
9.	Line Scriber 10"	25 Nos.
10.	Screw wrench-10"	25 Nos.
11.	Hand Hack saw	25 Nos.
12.	Cross Peen Hammer 500-1000 grams	25 -12 Nos.
13.	Center Punch 5"	25 Nos.
14.	Oil can	25 Set.
15.	Pipe Reamer 2"	12 Nos.
16.	Sprit level-12"	25 Nos.
17.	Try Square 8"	25 Nos.
18.	Half Round File 10"	25 Nos.
19.	Round File 10"	25 Nos.
20.	Blow lamp	06 Nos.

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Plumber (6-Months)

21.	Threading Die ½ " to 2" ratchet type	12 Nos.
22.	Caulking Chisels set	06 set.
23.	Plum bob	06 Nos.
24.	Pipe Vice 2" with Stand	12 Nos.
25.	Pipe Cutter ½" to 2"	12 Nos.
26.	Hand Electric Drill Machine capacity 13 mm.	04 Nos.
27.	Chisel (flat) 300 mm	12 Nos.
28.	Chisel (flat) 200 mm	12 Nos.
29.	Cross cut Chisel 180mm	12 Nos.
30.	Hallow Punch set 05 mm to 25 mm	02 set.
31.	Screw Driver Flat 10"	25 Nos.
32.	Bit drill set (Steel) 3mm to 10 mm	02 set.
33.	Bit drill (Masonry) 5mm to 13 mm	02 set.
34.	Socket Wrench set 6mm to 32mm	02 set.
35.	Centre Punch	24 Nos
36.	Twist Drill Bit Set	06 Set



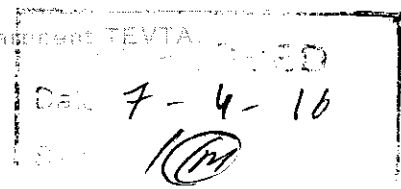
LIST OF HAND TOOLS & MACHINES

(For a class of 25 students)

Name of Trade	Plumber
Duration of Course	06 – Month

S. No.	Name of Tools & Equipment	Quantity
1.	Electric Drill Machine (Bench Type)	01
2.	Pipe Bending Machine Manual ½" to 2" (Hydraulic)	01
3.	Sheet bending machine (4 Feet)	01
4.	Burring and Grooving Machine	01
5.	Sheet rollers	01
6.	Electric Thread cutting machine ½" to 2"	01
7.	Pedestal grinder	01
8.	Lead melting pot	01
9.	Lead Ladle	01
10.	Double burners	01
11.	Piston & Plunger pump outlet size 1"	01
12.	Centrifugal pump outlet size 1"	01
13.	Picks & shawls	06
14.	Reamer 5H ₇ , 8H ₇ and 10H ₇	03
15.	Caulking Tools	02 Set
16.	PPRC Heater Machine	05 Nos.


Checked by: _____ Section: Academic Department TEVTA



COMPUTER LAB

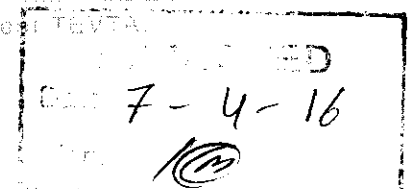
S. No.	Tools / Equipment	Quantity
1.	Desktop computer (Specifications as per notification issued by MIS Section, TEVTA)	26 (1 for each student & 1 for the teacher)
2.	Printer (Laser)	01
3.	Scanner	01
4.	Internet Connection (At least 1 MB speed)	01
5.	UPS 10 KVA	01
6.	Air Conditioner 1 ½ Ton	02
7.	Multimedia Projector	01

Approved by: MIS Section, Academic Department, TEVTA.

<p style="text-align: center;">APPROVED</p> <p>Date: 7-4-16</p> <p>Sign: </p>

List of Workshop/ Consumable Material
(For a Class of 25 Students)


Sr. No.	Contents	Quantity
1.	M.S.U Channel 75 X 38 mm	30 Kg
2.	M.S. Flat 60X15mm	50 Kg
3.	M.S Flat 60 X 06 mm	10 Kg
4.	M.S Flat 40 X 06 mm	06 Kg
1.	G.I. Pipe ½" dia.	200 ft
2.	G.I. Pipe ¾" dia.	40 ft
3.	G.I. Elbow ½"	48 Nos.
4.	G.I. Tee ½"	18 Nos.
5.	G.I. Socket ½"	24 Nos.
6.	G.I. Union ½"	12 Nos.
7.	G.I. Lock Nut ½"	12 Nos.
8.	G.I. Elbow ¾"	18 Nos.
9.	G.I. Tee ¾"	06 Nos.
10.	G.I. Socket ¾"	08 Nos.
11.	Gate valve ½"	06 Nos.
12.	Gate valve ¾"	06 Nos.
13.	Check valve ¾"	06 Nos.
14.	Water meter	06 Nos.
15.	Ferule valve ½"	06 Nos.
16.	Wash basin	06 Nos.
17.	Basin brackets	06 Pairs
18.	Kitchen Sink 18" X 36"	02 Nos.
19.	Sink Mixer ½"	02 Nos.
20.	Pillar cock (swan type)	06 Nos.
21.	Rubber connection 18"	12 Nos.
22.	Copper connection pipe 18"	12 Nos.



Plumber (6-Months)

23.	Stop cock ½"	48 Nos.
24.	Bib cock ½"	36 Nos.
25.	Flushing cistern (low level) (Plastic)	06 Nos.
26.	Shower Head ½"	06 Nos.
27.	Flushing cistern (high level) (cast iron)	02 Nos.
28.	PVC hockey pipe	12 Nos.
29.	PVC waste pipe	12 Nos.
30.	Water closet (Indian type)	04 Nos.
31.	Water closet (English type)	04 Nos.
32.	P trap 4"	04 Nos.
33.	Cast iron pipe 4" size	24 ft
34.	Cast iron pipe 2" size	12 ft
35.	C.I cowl	06 Nos.
36.	C.I. Bend 2" & 4"	12 Nos.
37.	C.I Tee 2" & 4"	06 Nos.
38.	Lead	01 kg
39.	Asbestos Rope 3/8"	01 kg
40.	Threading tape	06 Nos.
41.	PVC pipe ½" & ¾"	50 ft each
42.	Connection clamp with ¾" socket 4" size	06 Nos.
43.	Jute Thread	05 kg
44.	White Thread DMC / Teflon Tape	144 Nos
45.	Basin Mixer	06 Nos
46.	Hand Hack saw Blade	144 Nos
47.	Mobil Oil	25 Litre
48.	Waste Coupling for Sink	12 Nos
49.	Waste Coupling for Basin	12 Nos
50.	Pipe PPRC 25mm	52 Ft
51.	Elbow PPRC 25mm	50 Nos.
52.	Elbow ½" x 25mm	25 Nos.

Prepared by Curriculum Section, Academics Department, TEVIA

APPROVED
 Date: 7-4-16
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53.	Water Boiler (Geezer) 35 Ltr	02 Nos.
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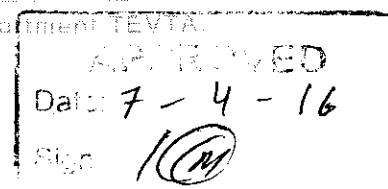
Functional English

S. No.	Item	Quantity
1.	Stationary	As per requirement
2.	Board Markers	As per requirement

I.T Fundamentals

S. No.	Item	Quantity
1.	Printing Paper	As per requirement
2.	Printer Toner	As per requirement

Developed by: Dr. J. S. Deshpande, Academics Department, TEVTA.



MINIMUM QUALIFICATION OF INSTRUCTOR

- DAE in (Civil / Mechanical) Technology With 2-Years relevant experience.

OR

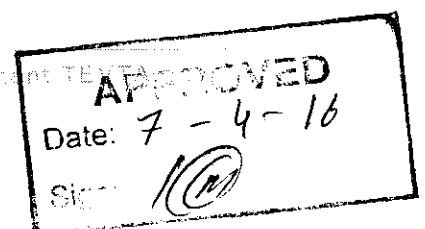
- Two Years certificate of Plumber & Pipe Fitter with 6-Years experience in relevant field.

Functional English

- M.A (English)

I.T Fundamentals

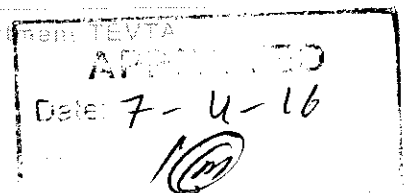
- DAE CIT/ BCS from HEC recognized university



EMPLOYABILITY OF PASS-OUTS

The pass outs of this course may find job / employment opportunities in the following areas / sectors: -

- Hospitals
- Hotels
- Railways
- Cement Plants
- Sugar Mills
- Repair & Maintenance work shop
- All Mechanical / Civil work Industries & Chemical Industries etc.
- Sui Northern Gas
- Sui Southern Gas
- Oil & Gas Development Corporation
- L.D.A, M.D.A, F.D.A, D.D.A etc.



REFERENCE BOOKS

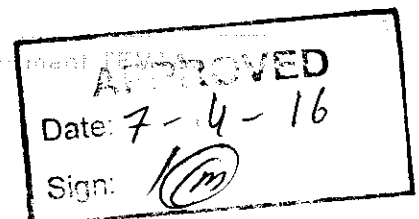
- Instructor Manual & Trainee Manual
- G-III Level (Development Cell)
- Pipe Fitting & Plumbing (Ikhlaq Ahmed)
- Plumbing (J. Murphy) New English Book London
- Sheet Metal (Loe A Mayer) US

Functional English

1. High School English Grammar By Wren & Martin
2. Oxford English Grammar

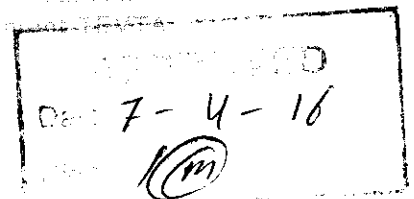
I.T Fundamentals

1. Introduction to Computer by Peter Norton
2. 2007 Microsoft® Office System Step by Step by Joyce Cox, Steve Lambert and Curtis Frye
3. Internet and E-mail with Windows 7 by Studio Visual Steps




LIST OF TRADE RELATED JARGON

Airlock	A blockage in water pipes
Air brick	A purposely designed brick which has fixed ventilation openings
Ball valve	A valve which is operated by a ball
Bidet	Bidets are used for cleaning the excretory organs of the body with either hot or cold water.
Cistern	A tank which is used to store water, such as the toilet cistern.
Conduit	A tube or tunnel that pipes pass through.
Downpipe	This is the drainpipe which runs down to the drain from a gutter.
Elbow	This is a fitting which connects two pipes at an angle of 45 or 90 degrees.
Cistern	cistern is used to flushing excreta attached with w.c.
Flue	A duct or passage that is designed to simply carry harmful
Flow rate	The quantity/volume of water that is delivered to a tap or an appliance in litres per minute (l/m) or litres per second (l/s).
Gate valve	These are generally used on low pressure pipework for isolation purposes.
Hard water	Water which contains a high level of calcium salts. Hard water is alkaline.
Lagging	This is the insulation which is wrapped around hot water cylinders/pipes/tanks
Mixer tap	This is one tap which allows hot and cold water to flow through it.
PTFE tape	This is tape which is used for sealing pipe threads.
Primary circuit	As assembly of water fittings which water circulates between a boiler and a primary heat exchanger inside a hot water storage vessel.
Servicing valve	These are installed near appliances such as cisterns for the purpose of individual isolation in order for maintenance to take place.
Silicon sealant	Silicon sealant is a gel which is used to seal the joints around baths, sinks and any other areas that are in need of protection from water.
Sink or sink unit	kitchen or a utility room fitting which is used for washing up, cleaning vegetables and other preparation activities.



- Soft water** The water which falls on moorland which tends to be pleasant for washing activities, it can though lead to corrosion problems.
- Soil pipe** A drainpipe which carries waste from a plumbing fixture,
- Stack** A stack is a vertical pipe which carries waste away from sinks and toilets.
- Thermostat** A device which regulates temperature i-e gysers
- U Bend** The U bend is the U shaped pipe which is located under the plug hole of sinks and baths.
- Vent pipe** This means a pipe which is open to atmosphere, opening up.

TEVIA
APPROVED
Date: 7-4-16
Sign: 

Plumber (6-Months)

Curriculum Revision Committee

- | | | |
|----|--|-----------------|
| 1. | Engr. Mazhar Abbas Naqvi,
Principal,
Govt. Staff Training College, Faisalabad | Convener |
| 2. | Mr. Amjad Rafique,
Sr. Instructor,
GCT Rasul | Member |
| 3. | Mr. Sultan Khan,
Chief Instructor,
GTTI Gulberg-II, Lahore | Member |

Department of Technical Education, Faisalabad

