

Program title plumber

Plumber

Introduction

The competency based curriculum guide for plumber is design to produce graduates equipped with knowledge, skills and attitudes required by the technicians having this occupation especially for the foreign employment. The program focuses mainly on practical activity, which is performed on actual or simulated sites.

Trainee will lean to use different tools and equipments and to work safely.

Successful graduates of the program will be capable of installing and maintaining pipelines and plumbing accessories. Graduates of this program typically hold job as “plumber”.

The features of this curriculum are:

1. The curriculum is designed on modular basis which gives enough flexibility in implementation.
2. The curriculum focuses practical experiences. However the minimum theoretical knowledge which directly affects the task performance is included.

Aims

The aim of this training is to provide competent and confident plumber who can provide effective services to the foreign industries.

Duration

The total duration of the course is 2.90 hrs.

Entry

Individuals designing to enter this program must be:

Requirements

1. Youths who are seeking foreign employment and have passed grade 9 or above.
2. Citizens of Nepal with minimum 21 years of age but not exceeding 40.
3. Physically and mentally fit.

Medium of instruction pattern of attendance focus of curriculum

The medium of instruction for this program will be Nepali and English. However, all technical terminologies will be taught in English.

The trainees should have at least 95% attendance to be eligible to take test and receive completion certificate.

This is a competency-based curriculum. This curriculum emphasizes on performance of competencies.

A.	Basic skills	Pr. /th.						
	a. Supply system		76.09 27.83	16.00 4.58	124.50	100		
	b. Drainage system							
B.	Domestic household system	Pr. /th.	61.33	8.58	69.91	100		500
c.	Industrial plumbing system	Pr. /th.	28.17	4.16	32.33	100		
D.	Project work	Pr. /th.	60.30		60.30	100		

Course objectives

Upon completion of this program, the trainee will be able to do the following:

- Given any house under construction, the trainee will be able to perform installation of supply and drainage system following all safety measures.
- Given any house having faulty supply or drainage system and description of problem provided by customer, the trainee will be able to repair the supply and drainage system with all safety measures.
- Given any faulty accessories and appliances the trainee will be able to replace the faulty accessories and appliances with all safety provisions.
- Given any building plan, the trainee will be able to layout the supply and drainage system according to the “standard code of practice” following all safety measures and estimate required material.

Assessment

Formative and summative evaluation are conducted to assess the performance of trainee.

Certification

For certification of the training and individual learner must have 95% attendance and a minimum of 70% in an aggregate of theory & practical test. Pass percentage for both theory and practical test are 70% however individual should pass both theory and practical tests separately.

Module and tasks

s.no	Skill	Theory credit hours(providing related information)	Practical credit hours (demonstration and assignment)	Total credit hours	Remarks
A. Basic skills					
a. Supply system					
1.	Cut GI pipe using hack saw.	30'	2hrs	2.5hrs	

2.	Cut GI pipe using pipe cutter	20'	1hr 40'	2.0hrs	
3.	Cut GI pipe using circular saw	25'	1hr20'	1.75hrs	
4.	Cut GI pipe using hand grinder	15'	1hr 25	1.67hrs	
5.	Bend GI and carbon pipe using bender	30'	3hrs	3.3hrs	
6.	Thread GI using hand die set	40'	2hrs 35	3.25hrs	
7.	Thread GI pipe using threading machine	25'	2hrs 40	3hrs 5'	
8.	Install GI fittings	40'	3hrs 5'	3.75 hrs	
9.	Install gate valve	20'	2hrs 10'	2.50	
10.	Chisel wall/floor	35'	3hrs 15'	3hrs 50'	
11.	Performing basic plastering work	25'	2 hrs 35'	3.0hrs	
12.	Test system for leakage	30'	3hrs	3.30 hrs	
13.	Layout supply pipes	40'	2 hrs 50'	3.30hrs	
14.	Install copper pipe fittings	30'	3hrs 30	4.00hrs	
15.	Install multi layer plastic pipe	35	3hrs 25'	4.00hrs	
16.	Install valves using flange	35	2 hrs 25'	3.00hrs	
17.	Repair gate valve	20'	2hrs 15'	2hrs 35'	
18.	Install furrel cock	45'	3hrs	3.75hrs	
19.	Install ppr fittings	30'	2hrs 40'		
20.	Cut carbon steel pipe using hand grinder	30'	2hrs	2.5hrs	
21.	Cut carbons steel pipe using circular saw.	30	2hrs	2.5hrs	
22.	Install insulation	25	2hrs	2hrs 25'	
23.	Install water meter	30	2hrs 30'	3.00hrs	
24.	Install water tank	20	3hrs 40'	4.00hrs	
25.	Install water pump	25	3hrs 50	4hrs 15'	
26.	Install water filter	20	2hrs 15'	2hrs 35'	
27.	Interpret isometric drawing of pipeline	1hr 30'	4hrs	5hrs 30'	
28.	Identify tools/equipment	1hr	2hrs	3hrs	
29.	Estimate material quantities	1hr	2hrs	3hrs	

A. Basic skills

b. Drainage system

1.	Cut PVC/HDPE pipe	20'	1hr 40'	2.00hrs
2.	Perform HDPE butt joint	30'	2hrs	2hrs 30'
3.	Install HDPE fittings	25'	3hrs 35'	4.00hrs

4. File PVC pipe.	20'	1hr	1hrs 20'
5. Join PVC cleaner and solvent Cement	30'	2hrs	
6. Install PVC fittings	30'	2hrs 30'	3.00hrs
7. Install stake	25'	2 hrs 10'	2hrs 35'
8. Cut cast iron pipe using chisel	20'	2hrs 5'	2hrs 25'
9. Cut cast iron pipe using circular saw	15'	2hrs	2 hrs 15'
10. Cut cast iron pipe using grinder	30'	2hrs	2hrs 30'
11. Install CI fittings	25'	3hrs 35'	4hrs
12. Repair waste pipe line	25'	3hrs. 15'	3hrs 40'

B. Domestic household plumbing system

1. Install wash basin	30'	3hrs. 20'	3hrs. 50
2. Install angle valve	15'	1hr 10'	1hrs 25'
3. Install flexible tube	20'	1hr	1hrs 20'
4. Install faucet	25'	1 hr 50'	2hrs 15'
5. Install waste coupling	15'	45'	1.00hr
6. Install bottle trap	20'	1 hr 35	1hr 55'
7. Install water closet	30'	3hrs 30	4.00hrs
8. Install cistern	20'	3hrs	3hrs 20'
9. Install flush valve	20'	2hrs 40'	3.00hrs
10. Install floor pan seats	25'	2hrs25	2hrs 50'
11. Install bath tub	20'	4.00hrs	4hrs 20'
12. Install shower tray	20'	3hrs 40'	4.00hrs
13. Install kitchen sink	25'	3hrs 35'	4.00hrs
14. Install urinal	25'	3hrs 15'	3hrs 40'
15. Install flush meter	20'	2hrs 40'	3.00hrs
16. Install toilet partition	20'	2hrs 30'	2hrs 50'
17. Install bidet	20'	3 hrs 40'	4.00hrs
18. Install gas geyser	25'	3hrs 15'	3hrs 40'
19. Install electric geyser	15'	2hrs 45'	3.00hrs
20. Repair electric geyser	15'	2hrs 35'	2hrs 50'
21. Repair cistern	15'	2hrs 20'	2hrs 35'
22. Repair flush valve	25'	3hrs	3hrs 25'
23. Repair trap	25'	1hrs 50'	2hr 15'
24. Repair mixture	25'	2hr	2hr 25'

c. Industrial plumbing system

1. Tag carbon steel pipe (arc weld)	35'	3hrs 25'	4.00hrs
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2. Weld carbon steel pipe (tig weld)	20'	3hrs 15'	3hrs 35'
3. Make bracket/clamp	25'	3hrs 20'	3hrs 45'
4. Punch number/ letter in carbon Steel pipe	20'	1hr	1hrs 15'
5. Flare MS pipes and copper tubes	20'	3hrs 15'	3hr 35'
6. Install solenoid valve	20'	1hr 15'	1hr35'
7. Install pinch (air) valve	20'	1hr 50'	2hr 10'
8. Bend stainless steel pipe	30'	3hrs	3hr 30'
9. Lay concrete pipe (12-18mm)	15'	2hrs	2hr 15'
10. Join concrete pipes (spigot joint)	15'	2hrs 50'	3hrs 05'

D. Project works

1. Make some HDPE pipe fitting with performing butt Joint		8.00hrs	8.00hrs
• 45 ⁰ bend			
• 90 ⁰ bend (elbow)			
• T-branch			
• Y-branch			
2. Install water pump complete connection with roof tank (Use electrical controlling device)		6.00hrs	6.00hrs
3. Install GI fitting (bathroom installation with 3 apparatus) wash basin, shower and commmod with flushometer		9.00hrs	9.00hrs
4. Install soil and waste pipeline with 3 apparatus (use PVC pipe with fittings) wash basin, shower tray and commod		6.00hrs	6.00hrs
5. Install hot and cold water supply line for two apparatus Using PPR pipe with fittings (wash basin, floor pan With cistern)		6.00hrs	6.00hrs
6. Join copper tube by using solder with different fittings (T, bend and connectors)		6.00hrs	6.00hrs
7. Install insulation on hot water pipe line of electric geyser		3.00hrs	3.00hrs
8. Install cast iron pipe fittings using jute with lead (Joining matter)		4.30hrs	4.30hrs
9. Tag carbon steel pipe (making 90 ⁰ bend with bevel And number or letter punch)		8.00hrs	8.00hrs
10. Install sensor tap with wash basin using by GI cold water Supply pipeline		4.00hrs	4.00hrs