



Model Curriculum

QP Name: Junior Plumber

QP Code: STC - PLM/NSQF -2022/ 3002

QP Version: 2.0

NSQF Level: 3

Model Curriculum Version: 2.0



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Training Parameters

Sector	Plumbing
Sub-Sector	Non-industrial Plumbing
Occupation	Junior Plumber
Country	India
NSQF Level	3
Aligned to NCO/ISCO/ISIC Code	
Minimum Educational Qualification and Experience	1. Class 10 Pass OR 2. Class 8 pass and pursuing continuous regular schooling, OR 3. Class 8 Pass with 1 year experience, OR 4. Class 8 Pass with NTC/NAC(2yrs) in Plumber Trade OR 5. Previous relevant qualification of NSQF Level 2.5 with 1 yr experience
Pre-Requisite License or Training	
Minimum Job Entry Age	18 years
Last Reviewed On	30.11.2022
Next Review Date	30.10.2025
Version	2.0
NSQC Approval Date	05.01.2023
Model Curriculum Creation Date	01.11.2021
Model Curriculum Valid Upto Date	31.10.2025
Model Curriculum Version	2.0



Minimum Duration of the Course	600 hours
Maximum Duration of the Course	600 hours



Program Overview

This section summarizes the end objectives of the program along with its duration.

Training Outcomes

At the end of the program, the participants will be able to:

- Apply Safe Working Practices
- Identify Hand tools and fittings.
- Identify various types of taps, valves.
- Understand diagrams and drawings used for plumbing and sanitary works
- Identify different layout of plumbing and sanitary pipe networks.
- Detect damage in taps, pipelines, sanitary pipe, plumbing pipe and suggest rectification /repair
- Install the pipe connection to Septic Tanks and well type toilet.
- Construct septic tank, soak well, well type's toilets as per drawing.
- Perform gas welding in metal pipes.
- Work in real job situation with special emphasis on basic safety and hazards in this domain.
- Employability Skills

Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
PLM/3002/OC1 Apply Safe Working Practices NOS Version No.: 2.0 NSQF Level: 3	10:00 Hours	20:00 Hours	00:00Hours	00:00Hours	30:00 Hours
Module1: Apply Safe Working Practices	10:00 Hours	20:00 Hours	00:00Hours	00:00Hours	30:00 Hours
PLM/3002/OC2 Identify Hand tools and fittings. NOS Version No. :2.0 NSQF Level:3	10:00 Hours	20:00 Hours	00:00Hours	00:00Hours	30:00 Hours



Module2: Identify Hand tools and fittings.	10:00 Hours	20:00 Hours	00:00Hours	00:00Hours	30:00 Hours
PLM/3002/OC3 Identify various types of taps, valves. NOS Version No.:2.0 NSQF Level: 3	10:00 Hours	20:00 Hours	00:00Hours	00:00Hours	30:00 Hours
Module3: Identify various types of taps, valves.	10:00 Hours	20:00 Hours	00:00Hours	00:00Hours	30:00 Hours
PLM/3002/OC4 Understand diagrams and drawings used for plumbing and sanitary works NOS Version No.:2.0 NSQF Level:3	10:00 Hours	20:00 Hours	00:00Hours	00:00Hours	30:00 Hours
Module 4: Understand diagrams and drawings used for plumbing and sanitary works	10:00 Hours	20:00 Hours	00:00Hours	00:00Hours	30:00 Hours
PLM/3002/OC5 Identify different layout of plumbing and sanitary pipe networks. NOS Version No.:2.0 NSQF Level: 3	10:00 Hours	20:00 Hours	00:00Hours	00:00Hours	30:00 Hours
Module 5:Identify different layout of plumbing and sanitary pipe networks.	10:00 Hours	20:00 Hours	00:00Hours	00:00Hours	30:00 Hours
PLM/3002/OC6 Detect damage in taps, pipelines, sanitary pipe, plumbing pipe and suggest rectification /repair NOS Version No.: 2.0 NSQF Level: 3	20:00 Hours	40:00 Hours	00:00Hours	00:00Hours	60:00 Hours
Module 6: Detect damage in taps, pipelines, sanitary pipe, plumbing pipe and suggest	20:00 Hours	40:00 Hours	00:00Hours	00:00Hours	60:00 Hours



rectification /repair					
PLM/3002/OC7 Install the pipe connection to Septic Tanks and well type toilet. NOS Version No.:2.0 NSQF Level: 3	20:00 Hours	40:00 Hours	00:00Hours	00:00Hours	60:00 Hours
Module 7: Install the pipe connection to Septic Tanks and well type toilet.	20:00 Hours	40:00 Hours	00:00Hours	00:00Hours	60:00 Hours
PLM/3002/OC8 Construct septic tank, soak well, well type's toilets as per drawing. NOS Version No.: 2.0 NSQF Level: 3	10:00 Hours	50:00 Hours	00:00Hours	00:00Hours	60:00 Hours
Module 8: Construct septic tank, soak well, well type's toilets as per drawing.	10:00 Hours	50:00 Hours	00:00Hours	00:00Hours	60:00 Hours
PLM/3002/OC9 Perform gas welding in metal pipes. NOS Version No.: 2.0 NSQF Level: 3	10:00 Hours	50:00 Hours	00:00Hours	00:00Hours	60:00 Hours
Module 9: Perform gas welding in metal pipes.	10:00 Hours	50:00 Hours	00:00Hours	00:00Hours	60:00 Hours
PLM/3002/OC10 Work in real job situation with special emphasis on basic safety and hazards in this domain. NOS Version No.: 2.0 NSQF Level: 3	00:00 Hours	00:00 Hours	150:00Hours	00:00Hours	150:00 Hours
Module 10: Work in real job situation with special emphasis on basic safety and hazards in this domain.	00:00 Hours	00:00 Hours	150:00Hours	00:00Hours	150:00 Hours



DGT/VSQ/N0102 Employability Skills	24:00 Hours	36:00 Hours	00:00Hours	00:00Hours	60:00 Hours
NOS Version No.: 1.0 NSQF Level: 3					
Module 11: Employability Skills	24:00 Hours	36:00 Hours	00:00Hours	00:00Hours	60:00 Hours
Total Duration	124:00 Hours	326:00 Hours	150:00Hours	00:00Hours	600:00 Hours



Module Details

Module1: Apply Safe Working Practices

Mapped to PLM/3002/OC1

Terminal Outcomes:

- Apply and maintain Safe Working Practices
- Recognize any unsafe situations according to site policy.
- Identify fire and safety and fire hazards
- Identify different fire extinguishers and use them as per requirements.

Duration: 10:00	Duration: 20:00
<p>Theory–Key Learning Outcomes</p> <ul style="list-style-type: none"> ● Maintain procedures to achieve a safe working environment in line with occupational health and safety regulations and requirements according to site policy. ● Recognize any unsafe situations according to site policy, and assess his report accordingly. ● Identify and take necessary precautions on fire and safety hazards and report according to site policy and procedures. 	<p>Practical–Key Learning Outcomes</p> <ul style="list-style-type: none"> ● Recognize any unsafe situations according to site policy, and assess his report accordingly. ● Demonstrate Personal Productive Equipment (PPE) like: safety helmet, safety glove, safety shoe, use the same as per related working environment. ● Demonstrate basic first aid & CPR and use them under different circumstances. ● Identify different fire extinguishers and use the same as per requirement in a mock drill.
<p>Classroom Aids:</p> <p>Computer, Projection Equipment, Power Point Presentation and software, Facilitator’s Guide, Participant’s Handbook.</p>	
<p>Tools, Equipment and Other Requirements:</p> <p>First Aid box, Different types of fire extinguishers, PPE kits, Safety charts.</p>	



Module2: Identify Hand tools and fittings.

Mapped to PLM/3002/OC2

Terminal Outcomes:

- Identify various types of tools and select for proper uses.
- Identify Hand Tools for Plumber work.
- Identify the pipe fittings.
- Identify tools for pipe fittings.
- Prepare the Pipe line circuit with fittings as per drawing.
- Identify different Sanitary and Plumbing fittings by showing them.
 - Demonstrate care of hand tools.

Duration: 10:00	Duration: 20:00
Theory–Key Learning Outcomes	Practical–Key Learning Outcomes
<ul style="list-style-type: none"> ● Types of Materials traditionally used in engineering application are identified wood, rubber, plastic, metal, concrete. ● Comparison of engineering materials in terms of their performance characterizes, thermal conductivity, Electrical Conductivity, Durability, Wear Resistance. ● Selection of suitable Engineering materials. ● Identification of Hand tools Hacksaw, Hammer, Measuring tape spirit level, reamer, Jointing equipment, Spanners, bench vice, pipe wrench and Threading die chisel. Function of such tools; Maintenance of hand tools after work cleaning, Lubricating, Sharpening, storage and safe keeping. ● Use of power tools for Plumbing Electric drill, grinders. ● Knowledge of Workshop procedures, operations. Cutting, Grinding, Drilling; Threading, fixing or bolting, Bending; removing damaged pipe. Drilling, Nailing, Clipping, Riveting, Hammering. ● Use of Power tools (like hand drill and grinders) at job Site Precaution required for use of power tools at job site. ● Use of taps, dies, die nuts, thread files etc. Care and Storing of hand tools, power tools. 	<ul style="list-style-type: none"> ● Select suitable Engineering materials. ● Identify of Hand tools Hacksaw, Hammer, Measuring tape spirit level, reamer, Jointing equipment, Spanners, bench vice, pipe wrench and Threading die chisel. Function of such tools; Maintenance of hand tools after work cleaning, Lubricating, Sharpening, storage and safe keeping. ● Use of power tools for Plumbing Electric drill, grinders. ● Identify the pipe fittings. ● Identify tools for pipe fittings. ● Prepare the Pipe line circuit with fittings as per drawing. ● Identify different Sanitary and Plumbing fittings by showing them. ● Demonstrate care of hand tools.



Classroom Aids:	
Computer, Projection Equipment, Power Point Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Measuring steel tape 3m long, Measuring pvc tape 20m long , Hackshaw , Hammer 1kg size. Spirit level , Spanner , Screw driver set , Bench vice, Pipe wrench, Threading die, Power drill Power grinder , Pipe Adapter, Elbow 90° 20 mm dia, Elbow 45° 20 mm dia , Reducing Elbow (20mm to 15 mm), Reducing Tee (20mm to 15 mm) , Tee 20 mm dia, Tee 15 mm dia , Nipple 15 mm dia Nipple 20 mm dia, Union 20mm & 15 mm, Valve 20 mm dia ,G.I.Pipe 20 mm & 12 mm dia – 5m long P. V.C Pipe 20 mm & 12 mm dia – 5m long, Coupler 20 mm & 15 mm dia, Reducer 20 mm & 15 mm dia . End cap 20 mm & 15 mm dia. Male Threaded Elbow 20 mm & 15 mm dia. Male Threaded Tee 20 mm & 15 mm dia. Female Threaded Elbow 20 mm & 15 mm dia. Female Threaded Tee 20 mm & 15 mm dia. Male Threaded adapter 20 mm & 15 mm dia. Female Threaded adapter 20 mm & 15 mm dia. Ball Valve 20 mm & 15 mm dia. Concealed valve 20 mm & 15 mm dia, Tank Connector (Male & Female) Kitchen sink with waste coupling, Wash Basin with waste coupling, Water Closet ('P' Type) Water Closet ('S' Type) ,PVC Cistern , Piller cock for basin, Bib cock , Bib cock for kitchen sink	



Module 3: Identify various types of taps, valves.

Mapped to PLM/3002/OC3

Terminal Outcomes:

- Recognize different taps and valves by showing them.
- Suggest valves /taps as per their location in pipelines.
- Identify tools for fitting the valves
- Identify the problems with the taps and valves and resolve it.

Duration:10:00	Duration:20:00
Theory–Key Learning Outcomes	Practical–Key Learning Outcomes
<p>The students will be able to describe the following:</p> <ul style="list-style-type: none"> ● Describe various types of taps and valves and their uses. ● Recognize the taps and vales as per their functions. ● Identify the tools for fitting the valves. ● Identify the problems with the taps and valves and resolve it. 	<p>The student will be able to do the following:</p> <ul style="list-style-type: none"> ● Recognize different taps and valves by showing them. ● Suggest valves /taps as per their location in pipelines. ● Identify tools for fitting the valves ● Identify the problems with the taps and valves and resolve it.
Classroom Aids:	
Computer,Projection Equipment, Power Point Presentation and software,Facilitator’s Guide, Participant’s Handbook	
Tools, Equipment and Other Requirements	
Measuring steel tape 3m long, Measuring pvc tape 20m long , Hackshaw , Hammer 1kg size. Spirit level , Spanner , Screw driver set , Bench vice, Pipe wrench, Threading die, Power drill Power grinder , Pipe Adapter, Elbow 90° 20 mm dia, Elbow 45° 20 mm dia , Reducing Elbow (20mm to 15 mm), Reducing Tee (20mm to 15 mm) , Tee 20 mm dia, Tee 15 mm dia , Nipple 15 mm dia Nipple 20 mm dia, Union 20mm & 15 mm, Valve 20 mm dia ,G.I.Pipe 20 mm & 12 mm dia – 5m long Q. V.C Pipe 20 mm & 12 mm dia – 5m long, Coupler 20 mm & 15 mm dia, Reducer 20 mm & 15 mm dia . End cap 20 mm & 15 mm dia. Male Threaded Elbow 20 mm & 15 mm dia. Male Threaded Tee 20 mm & 15 mm dia. Female Threaded Elbow 20 mm & 15 mm dia. Female Threaded Tee 20 mm & 15 mm dia. Male Threaded adapter 20 mm & 15 mm dia. Female Threaded adapter 20 mm & 15 mm dia. Ball Valve 20 mm & 15 mm dia. Concealed valve20 mm & 15 mm dia, Tank Connector (Male & Female) Kitchen sink with waste coupling, Wash Basin with waste coupling, Water Closet (‘P’ Type) Water Closet (‘S’ Type)	



Module 4: Understand diagrams and drawings used for plumbing and sanitary works

Mapped to PLM/3002/OC4

Terminal Outcomes:

- Familiarize with an existing sanitary and plumbing drawing.
- Identify different symbol used in the drawings of sanitary and plumbing works
- Draw a free hand sketch of a sanitary /plumbing pipeline network.
- Label the free hand sketch drawn .

Duration: 10:00	Duration: 20:00
Theory–Key Learning Outcomes	Practical–Key Learning Outcomes
<ul style="list-style-type: none"> ● Describe the convention used in drawings of Mechanical components. ● Explain the meaning .of basic abbreviations and symbols used in drawing. ● Identify mechanical components and their specification from drawing. ● Layout drawing of mechanical components. Draw free hand mechanical sketches of the components, Fabrication items. ● Identify location of electrical components by symbols used in construction drawing. Identify the stages of construction at which the installation of pipe line. ● Develop a piping schedule for a given installations. ● Develop free hand sketches. Draw a piping chart for simple bathroom installations. ● Draw a circuit to control hot and cold water. ● Draw piping chart for waste water outlet from the Bathroom. 	<ul style="list-style-type: none"> ● Familiarize with an existing sanitary and plumbing drawing. ● Identify different symbol used in the drawings of sanitary and plumbing works ● Layout drawing of mechanical components. ● Draw free hand mechanical sketches of the components, Fabrication items. ● Draw a free hand sketch of a sanitary /plumbing pipeline network. ● Label the free hand sketch drawn .
Classroom Aids:	
Computer,Projection Equipment,Power Point Presentation and software,Facilitator’s Guide, Participant’s Handbook	
Tools, Equipment and Other Requirements	
Measuring steel tape 3m long, Measuring pvc tape 20m long , Hackshaw , Hammer 1kg size. Spirit level , Spanner , Screw driver set , Bench vice, Pipe wrench, Threading die, Power drill Power grinder , Pipe Adapter, Elbow 90° 20 mm dia, Elbow 45° 20 mm dia , Reducing Elbow (20mm to 15 mm), Reducing Tee (20mm to 15 mm) , Tee 20 mm dia, Tee 15 mm dia , Nipple 15 mm dia Nipple 20 mm dia, Union 20mm & 15 mm, Valve 20 mm dia ,G.I.Pipe 20 mm & 12 mm dia – 5m long	



R. V.C Pipe 20 mm & 12 mm dia – 5m long, Coupler 20 mm & 15 mm dia, Reducer 20 mm & 15 mm dia . End cap 20 mm & 15 mm dia. Male Threaded Elbow 20 mm & 15 mm dia. Male Threaded Tee 20 mm & 15 mm dia. Female Threaded Elbow 20 mm & 15 mm dia. Female Threaded Tee 20 mm & 15 mm dia. Male Threaded adapter 20 mm & 15 mm dia. Female Threaded adapter 20 mm & 15 mm dia. Ball Valve 20 mm & 15 mm dia. Concealed valve 20 mm & 15 mm dia, Tank Connector (Male & Female)
Kitchen sink with waste coupling, Wash Basin with waste coupling, Water Closet ('P' Type)
Water Closet ('S' Type) .



Module 5: Identify different layout of plumbing and sanitary pipe networks.

Mapped to PLM/3002/OC5

Terminal Outcomes:

- Recognize the type of pipe network used in an existing building.
- Recognize an existing Sanitary network
- Identify the leakage of the sanitary pipe.
- Remove and replace the pipe with exact specification and test it.

Duration: 10:00	Duration: 20:00
Theory–Key Learning Outcomes	Practical–Key Learning Outcomes
<ul style="list-style-type: none"> • Identify different types of pipes used for installation (i) G.I. pipe, cast iron pipe, P.V.C pipe, Glazed soil pipe and the purpose of their use. (ii) Proper materials are identified to different applications. (iii) Appropriate pipe fitting are identified according to I.S standard and method of installation. • Pipe work for domestic water supply, jointing system threading, bolting etc. • Selection of G.I. or P.V.C pipes of various dia for Water supply system, • Joining method by use of appropriate fittings, reduction in dia incase of distribution system, • Set out pipe run and install pipe work for domestic water supply. The work involves setting out alignment of pipe. Marking out, the nos. of tapping to be made by providing fittings, • Pipe work installed according to job specification and tested. • Fittings like C.I. manhole covers, C.I. pipes for 	<ul style="list-style-type: none"> • Identify basic types of pipe work and accessories used for Sanitary System. • TEST the installation - Installation is pressure tested for compliance with job specification and standard, Leaks' detected are rectified. • Waste pipe lines for disposal of waste water by Concealed drain. Method of installation of Cast Iron, Glazed soil pipes, P.V.C pipes for disposal of waste water, • Construction Masonry Manhole, intercepting chambers, Master trap pipe, clamping, and inspection, • Method of jointing pipes and caulking. Manholes with cover, Conducting smoke test after completion of Installment. • Identify different types of pipes used for installation. G.I. pipe, cast iron pipe, P.V.C pipe, Glazed soil pipe and



<p>out let inlet.</p> <ul style="list-style-type: none"> • Method of Masonry Construction of Septic tank soak wells and well type toilet construction, • Finishing of Septic tank, Soak Well, Well type toilet. • Installation of Plumbing Components Accessories and Fixture. 	<p>the purpose of their use.</p> <ul style="list-style-type: none"> • Appropriate pipe fitting are identified according to I.S standard and method of installation. Pipe work for domestic water supply, jointing system threading, bolting etc. Selection of G.I. or P.V.C pipes of various dia for Water supply system. Joining method by use of appropriate fittings, reduction in dia incase of distribution system. Set out pipe run and install pipe work for domestic water supply. The work involves setting out alignment of pipe. Marking out, the nos. of tapping to be made by providing fittings, • Pipe work installed according to job specification and tested.
<p>Classroom Aids:</p>	
<p>Computer, Projection Equipment, Power Point Presentation and software, Facilitator's Guide, Participant's Handbook</p>	
<p>Tools, Equipment and Other Requirements</p>	
<p>Measuring steel tape 3m long, Measuring pvc tape 20m long, Hackshaw, Hammer 1kg size. Spirit level, Spanner, Screw driver set, Bench vice, Pipe wrench, Threading die, Power drill Power grinder, Pipe Adapter, Elbow 90° 20 mm dia, Elbow 45° 20 mm dia, Reducing Elbow (20mm to 15 mm), Reducing Tee (20mm to 15 mm), Tee 20 mm dia, Tee 15 mm dia, Nipple 15 mm dia Nipple 20 mm dia, Union 20mm & 15 mm, Valve 20 mm dia, G.I. Pipe 20 mm & 12 mm dia – 5m long S. V.C Pipe 20 mm & 12 mm dia – 5m long, Coupler 20 mm & 15 mm dia, Reducer 20 mm & 15 mm dia. End cap 20 mm & 15 mm dia. Male Threaded Elbow 20 mm & 15 mm dia. Male Threaded Tee 20 mm & 15 mm dia. Female Threaded Elbow 20 mm & 15 mm dia. Female Threaded Tee 20 mm & 15 mm dia. Male Threaded adapter 20 mm & 15 mm dia. Female Threaded adapter 20 mm & 15 mm dia. Ball Valve 20 mm & 15 mm dia. Concealed valve 20 mm & 15 mm dia, Tank Connector (Male & Female) Kitchen sink with waste coupling, Wash Basin with waste coupling, Water Closet ('P' Type) Water Closet ('S' Type) .</p>	



Module 6: Detect damage in taps, pipelines, sanitary pipe, plumbing pipe and suggest rectification /repair

Mapped to PLM/3002/OC6

Terminal Outcomes:

- Identify fault in a damaged pipe network.
- Select the proper tap for replacement.
- Check the performance after repair.
- Calculate the actual cost.
- Install pipeline in building wall or underground.
- Demonstrate pipe joints.
- Test if there is any leakage in pipelines.

Duration: 20:00	Duration: 40:00
Theory–Key Learning Outcomes	Practical–Key Learning Outcomes
<p>The student will be able to describe the following:-</p> <ul style="list-style-type: none"> • Method of identification of fault in a damaged pipe network. • Select the proper tap for replacement. • Check the performance after repair. • Calculate the actual cost. • Install pipeline in building wall or underground. • Demonstrate pipe joints. • Testing procedure if there is any leakage in pipelines. 	<p>The students will be able to do the following activities:</p> <ul style="list-style-type: none"> • Identify fault in a damaged pipe network. • Select the proper tap for replacement. • Check the performance after repair. • Calculate the actual cost. • Install pipeline in building wall or underground. • Demonstrate pipe joints. • Test if there is any leakage in pipelines.
Classroom Aids:	
Computer, Projection Equipment, Power Point Presentation and software, Facilitator’s Guide, Participant’s Handbook	
Tools, Equipment and Other Requirements	
<p>Measuring steel tape 3m long, Measuring pvc tape 20m long, Hackshaw, Hammer 1kg size. Spirit level, Spanner, Screw driver set, Bench vice, Pipe wrench, Threading die, Power drill Power grinder, Pipe Adapter, Elbow 90° 20 mm dia, Elbow 45° 20 mm dia, Reducing Elbow (20mm to 15 mm), Reducing Tee (20mm to 15 mm), Tee 20 mm dia, Tee 15 mm dia, Nipple 15 mm dia Nipple 20 mm dia, Union 20mm & 15 mm, Valve 20 mm dia, G.I. Pipe 20 mm & 12 mm dia – 5m long T. V.C Pipe 20 mm & 12 mm dia – 5m long, Coupler 20 mm & 15 mm dia, Reducer 20 mm & 15 mm dia. End cap 20 mm & 15 mm dia. Male Threaded Elbow 20 mm & 15 mm dia. Male Threaded Tee 20 mm & 15 mm dia. Female Threaded Elbow 20 mm & 15 mm dia. Female Threaded Tee 20 mm & 15 mm dia. Male Threaded adapter 20 mm & 15 mm dia. Female Threaded adapter 20 mm & 15</p>	



mm dia. Ball Valve 20 mm & 15 mm dia. Concealed valve 20 mm & 15 mm dia, Tank Connector (Male & Female)
Kitchen sink with waste coupling, Wash Basin with waste coupling, Water Closet ('P' Type)
Water Closet ('S' Type) .75 mm dia PVC Pipe .75 mm dia PVC Tee, 75 mm dia PVC Tee with door
75 mm dia PVC 'Y' connector, 75 mm dia PVC vent cowl . Pipe Clip with screw for 75 mm dia pipe
Nahani Trap. 'P' type trap. 'S' type trap. Bye Pass Bend 75 mm dia. Pipe jointing solvent



Module 7: Install the pipe connection to Septic Tanks and well type toilet. Mapped to PLM/3002/OC7

Terminal Outcomes:

- Plan and identify the tools and equipment required for the given job.
- Draw the rough diagram before given connection.
- show the pipe connection in a dummy septic tank and soak pit.
- Identify and name different components of septic tank.
- Install the pipe connection as per drawing.
- Test the connection for any leakage.
- Observed safety precaution for the given septic tanks and suggest precautionary safety measures.

Duration: 20:00	Duration: 40:00
Theory–Key Learning Outcomes	Practical–Key Learning Outcomes
<ul style="list-style-type: none"> • The candidates will be able to describe the followings:- • Installation of Plumbing Components Accessories and Fixture. • Plan and identify the tools and equipment required for the given job. • Draw the rough diagram before given connection. • show the pipe connection in a dummy septic tank and soak pit. • Identify and name different components of septic tank. • Install the pipe connection as per drawing. • Test the connection for any leakage. • Observed safety precaution for the given septic tanks and suggest precautionary safety measures. 	<ul style="list-style-type: none"> • The candidate will be able to demonstrate the following activities:- • Plan and identify the tools and equipment required for the given job. • Draw the rough diagram before given connection. • show the pipe connection in a dummy septic tank and soak pit. • Identify and name different components of septic tank. • Install the pipe connection as per drawing. • Test the connection for any leakage. • Observed safety precaution for the given septic tanks and suggest precautionary safety measures.
Classroom Aids:	
Computer, Projection Equipment, Power Point Presentation and software, Facilitator’s Guide, Participant’s Handbook	
Tools, Equipment and Other Requirements	
Measuring steel tape 3m long, Measuring pvc tape 20m long , Hackshaw , Hammer 1kg size. Spirit level , Spanner , Screw driver set , Bench vice, Pipe wrench, Threading die, Power drill Power grinder , Pipe Adapter, Elbow 90° 20 mm dia, Elbow 45° 20 mm dia , Reducing Elbow (20mm to 15 mm), Reducing Tee (20mm to 15 mm) , Tee 20 mm dia, Tee 15 mm dia , Nipple 15 mm dia	



Nipple 20 mm dia, Union 20mm & 15 mm, Valve 20 mm dia ,G.I.Pipe 20 mm & 12 mm dia – 5m long
U. V.C Pipe 20 mm & 12 mm dia – 5m long, Coupler 20 mm & 15 mm dia, Reducer 20 mm & 15 mm
dia . End cap 20 mm & 15 mm dia. Male Threaded Elbow 20 mm & 15 mm dia. Male Threaded Tee
20 mm & 15 mm dia. Female Threaded Elbow 20 mm & 15 mm dia. Female Threaded Tee 20 mm &
15 mm dia. Male Threaded adapter 20 mm & 15 mm dia. Female Threaded adapter 20 mm & 15
mm dia. Ball Valve 20 mm & 15 mm dia. Concealed valve 20 mm & 15 mm dia, Tank Connector
(Male & Female)
Kitchen sink with waste coupling, Wash Basin with waste coupling, Water Closet ('P' Type)
Water Closet ('S' Type) .75 mm dia PVC Pipe .75 mm dia PVC Tee, 75 mm dia PVC Tee with door
75 mm dia PVC 'Y' connector, 75 mm dia PVC vent cowl . Pipe Clip with screw for 75 mm dia pipe
Nahani Trap. 'P' type trap. 'S' type trap. Bye Pass Bend 75 mm dia. Pipe jointing solvent



**Module 8: Construct septic tank, soak well, well types toilets as per drawing.
Mapped to PLM/3002/OC8**

Terminal Outcomes:

- Plan and identify tools and equipment required for desired purpose.
- Select raw materials required
- Construct the septic tank, soak well, well types toilets as per drawing with proper safety precautions.
- Measure all dimensions as per drawing.

Duration: 10:00	Duration: 50:00
Theory–Key Learning Outcomes	Practical–Key Learning Outcomes
<ul style="list-style-type: none"> • Drawing of septic tank, Material used for Construction of Septic tank. Function of a Septic tank and the capacity based on users. • Soak well, construction of soak well, Material used for construction of Soak well. Well type toilets, Method of Construction of well type Toilets. • Method of Estimation based on Septic tank design. Fittings like C.I. manhole covers, C.I. pipes for out let inlet. Method of Masonry Construction of Septic tank soak wells and well type toilet construction. Finishing of Septic tank, Soak Well, Well type toilet. • Use of Mason’s Tools, Knowledge of Brick masonry, use of cement mortar of various proportion, method of bonding bricks in Masonry work. <ul style="list-style-type: none"> • Use of cement concrete, method / knowledge of preparing cement concrete mix, (M10, M15) • Construction of RC. slab for inspection pit, manholes etc. 	<ul style="list-style-type: none"> • Plan and identify tools and equipment required for desired purpose. • Select raw materials required • Drawing of septic tank, Material used for Construction of Septic tank. Function of a Septic tank and the capacity based on users. • Soak well, construction of soak well, Material used for construction of Soak well. Well type toilets, Method of Construction of well type Toilets. • Method of Estimation based on Septic tank design. Fittings like C.I. manhole covers, C.I. pipes for out let inlet. Method of Masonry Construction of Septic tank soak wells and well type toilet construction. Finishing of Septic tank, Soak Well, Well type toilet.
Classroom Aids:	
Computer, Projection Equipment, Power Point Presentation and software, Facilitator’s Guide, Participant’s Handbook	
Tools, Equipment and Other Requirements	



Measuring steel tape 3m long, Measuring pvc tape 20m long , Hackshaw , Hammer 1kg size.
Spirit level , Spanner , Screw driver set , Bench vice, Pipe wrench, Threading die, Power drill
Power grinder , Pipe Adapter, Elbow 90° 20 mm dia, Elbow 45° 20 mm dia , Reducing Elbow (20mm to 15 mm), Reducing Tee (20mm to 15 mm) , Tee 20 mm dia, Tee 15 mm dia , Nipple 15 mm dia
Nipple 20 mm dia, Union 20mm & 15 mm, Valve 20 mm dia ,G.I.Pipe 20 mm & 12 mm dia – 5m long
V. V.C Pipe 20 mm & 12 mm dia – 5m long, Coupler 20 mm & 15 mm dia, Reducer 20 mm & 15 mm dia . End cap 20 mm & 15 mm dia. Male Threaded Elbow 20 mm & 15 mm dia. Male Threaded Tee 20 mm & 15 mm dia. Female Threaded Elbow 20 mm & 15 mm dia. Female Threaded Tee 20 mm & 15 mm dia. Male Threaded adapter 20 mm & 15 mm dia. Female Threaded adapter 20 mm & 15 mm dia. Ball Valve 20 mm & 15 mm dia. Concealed valve 20 mm & 15 mm dia, Tank Connector (Male & Female)
Kitchen sink with waste coupling, Wash Basin with waste coupling, Water Closet ('P' Type)
Water Closet ('S' Type) .75 mm dia PVC Pipe .75 mm dia PVC Tee, 75 mm dia PVC Tee with door
75 mm dia PVC 'Y' connector, 75 mm dia PVC vent cowl . Pipe Clip with screw for 75 mm dia pipe
Nahani Trap. 'P' type trap. 'S' type trap. Bye Pass Bend 75 mm dia. Pipe jointing solvent



Module 9: Perform gas welding in metal pipes.

Mapped to PLM/3002/OC9

Terminal Outcomes:

- List the tools and equipment required for welding in metal pipes.
- Select the iron pipes to join.
- Join two iron pipes by gas welding.
- Identify defects in welding and their prevention.

Duration: 10:00	Duration: 50:00
Theory–Key Learning Outcomes	Practical–Key Learning Outcomes
<p>The student will be able to describe the followings:-</p> <ul style="list-style-type: none"> • Method of using OXY - acetylene arrangement should be explained System of operating OXY - acetylene plant. • Method of gas welding, Soldering, Brazing, Heating metal for shaping and cutting. Welding and Brazing procedure and materials required. • Welding faults and its causes, use of protection and safety guard during Welding. • Inspection of gas cylinders pressure regulator, hoses, torches, necessary. 	<p>The candidate will be able to do the following activities:-</p> <ul style="list-style-type: none"> • List the tools and equipment required for welding in metal pipes. • Select the iron pipes to join. • Join two iron pipes by gas welding. • Identify defects in welding and their prevention.
Classroom Aids:	
Computer, Projection Equipment, Power Point Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Measuring steel tape 3m long, Measuring pvc tape 20m long, Hackshaw, Hammer 1kg size. Spirit level, Spanner, Screw driver set, Bench vice, Pipe wrench, Threading die, Power drill Power grinder, Pipe Adapter, Elbow 90° 20 mm dia, Elbow 45° 20 mm dia, Reducing Elbow (20mm to 15 mm), Reducing Tee (20mm to 15 mm), Tee 20 mm dia, Tee 15 mm dia, Nipple 15 mm dia Nipple 20 mm dia, Union 20mm & 15 mm, Valve 20 mm dia, G.I. Pipe 20 mm & 12 mm dia – 5m long W. V.C Pipe 20 mm & 12 mm dia – 5m long, Coupler 20 mm & 15 mm dia, Reducer 20 mm & 15 mm	



dia . End cap 20 mm & 15 mm dia. Male Threaded Elbow 20 mm & 15 mm dia. Male Threaded Tee 20 mm & 15 mm dia. Female Threaded Elbow 20 mm & 15 mm dia. Female Threaded Tee 20 mm & 15 mm dia. Male Threaded adapter 20 mm & 15 mm dia. Female Threaded adapter 20 mm & 15 mm dia. Ball Valve 20 mm & 15 mm dia. Concealed valve 20 mm & 15 mm dia, Tank Connector (Male & Female)

Kitchen sink with waste coupling, Wash Basin with waste coupling, Water Closet ('P' Type) Water Closet ('S' Type) .75 mm dia PVC Pipe .75 mm dia PVC Tee, 75 mm dia PVC Tee with door 75 mm dia PVC 'Y' connector, 75 mm dia PVC vent cowl . Pipe Clip with screw for 75 mm dia pipe Nahani Trap. 'P' type trap. 'S' type trap. Bye Pass Bend 75 mm dia. Pipe jointing solvent



Module 10: Work in real job situation with special emphasis on basic safety and hazards in this domain

Mapped to PLM/3002/OC10

Terminal Outcomes:

Assessor will check report prepared for this component of training of the course and assess whether competency has been developed to work in the real job situation with special emphasis on basic safety and hazards in this domain. (The trainee is expected to undertake work in actual workplace under any supervisor / contractor for 150 Hours.)

Duration:00:00	Duration: 150:00
Theory–Key Learning Outcomes	Practical–Key Learning Outcomes
	<ul style="list-style-type: none">Assessor will check report prepared for this component of training of the course and assess whether competency has been developed to work in the real job situation with special emphasis on basic safety and hazards in this domain. (The trainee is expected to undertake work in actual workplace under any supervisor / contractor for 150 Hours.)
Classroom Aids:	
Tools, Equipment and Other Requirements	

Module11: Employability skills



Mapped to DGT/VSQ/N0102, v 1.0

Terminal Outcomes:

- Describe the traits of individual at workplace
- Demonstrate apply employability and entrepreneurship skills at workplace

Duration: 24:00	Duration: 36:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the importance of Employability Skills in meeting the job requirements. • Explain constitutional values, civic rights, duties, citizenship, responsibility towards society etc. that are required to be followed to become a responsible citizen. • Discuss 21st century skills. • Display positive attitude, self - motivation, problem solving, time management skills and continuous learning mindset in different situations. • Discuss the significance of reporting sexual harassment issues in time • Discuss the significance of using financial products and services safely and securely. • Explain the significance of approaching the concerned authorities in time for any exploitation as per legal rights and laws • Explain the importance of managing expenses, income, and savings. • Discuss the significance of using internet for browsing, accessing social media platforms, safely and securely • Discuss the need for identifying opportunities for potential business, sources for arranging money and potential legal and financial challenges • Differentiate between types of customers 	<ul style="list-style-type: none"> • Show how to practice different environmentally sustainable practices • Use appropriate basic English sentences/phrases while speaking • Demonstrate how to communicate in a well -mannered way with others • Demonstrate working with others in a team • Show how to conduct oneself appropriately with all genders and PwD • Show how to operate digital devices and use the associated applications and features, safely and securely • Create a biodata • Use various sources to search and apply for jobs



<ul style="list-style-type: none">• Explain the significance of identifying customer needs and addressing them• Discuss the significance of maintaining hygiene and dressing appropriately• Discuss the significance of dressing up neatly and maintaining hygiene for an interview• Discuss how to search and register for apprenticeship opportunities	
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator’s Guide, Participant’s Handbook	
Tools, Equipment and Other Requirements	
Computer/laptop.	



Details Syllabus Content

Detail of Theory Syllabus:

1. Introduction to plumbing technology used in plumbing.

2. Apply Mechanical Fundamentals and Mathematics :

- (a) Simple arithmetical knowledge addition, Subtraction, Multiplication Division.
- (b) Use of units Feet and Inches, Meter and Centimeter; Grams Kilograms etc., knowledge of Decimals.
- (c) Measurement of Length, expressing sizes diameter, calculation of area and Volume.
- (d) Mass or Weight of various objects say Cement Sand, Bricks, Water etc. (e) Geometrical property of lines, angles, polygons, circles etc.

Mechanical Terms

Speed, Velocity, Force, Energy, Work, Power and Efficiency.

Calculation of Mechanical quantity, Lever system and the Mechanical drive, (a) Pressure, Flow, Force Liner movement, Load, Lift, (b) Type of pressure, how they relate to Hydraulic power system, (c) International standard units. (S.I. unit)

3. Interpret diagram and drawings used for plumbing work:

- (a) Describe the convention used in drawings of Mechanical components.
- (b) Explain the meaning .of basic abbreviations and symbols used in drawing,
- (c) Identify mechanical components and their specification from drawing.
- (d) Layout drawing of mechanical components.
- (e) Draw free hand mechanical sketches of the components, Fabrication items.
- (f) Describe Conventions used in construction drawings of building structures etc.
- (h) Identify location of electrical components by symbols used in construction drawing.
- (i) Identify the stages of construction at which the installation of pipe line.
Fitting used in installation
Sanitary Fittings and water conducting equipment.
List of area where co-operation of other agency is involved.
Identify building materials and their property may effect during installation of pipe lines, fittings etc.
- (j) Identify the type of pipes their origin and route from a piping schedule, (k) Develop a piping schedule for a given installations.
- (l) Develop free hand sketches
 - (1) Draw a piping chart for simple bathroom installations.



- (2) Draw a circuit to control hot and cold water.
- (3) Draw piping chart for waste water outlet from the Bathroom.

4. Knowledge of Common tools and equipment for plumbing Work including method of Testing

- (a) Types of Materials traditionally used in engineering application are identified wood, rubber, plastic, metal, concrete.
- (b) Comparison of engineering materials in terms of their performance characterizes, thermal conductivity, Electrical Conductivity, Durability, Wear Resistance.
- (c) Selection of suitable Engineering materials.
- (d) Identification of Hand tools Hacksaw, Hammer, Measuring tape spirit level, reamer, Jointing equipment, Spanners, bench vice, pipe wrench and Threading die chisel. Function of such tools; Maintenance of hand tools after work cleaning, Lubricating, Sharpening, storage and safe keeping.
- (e) Use of power tools for Plumbing Electric drill, grinders.
- (f) Knowledge of Workshop procedures, operations. Cutting, Grinding, Drilling; Threading, fixing or bolting, Bending; removing damaged pipe. Drilling, Nailing, Clipping, Riveting, Hammering.,
- (g) Workshop procedures to be followed during work.
- (h) Use of Power tools (like hand drill and grinders) at job Site Precaution required for use of power tools at job site.
- (i) Use of taps, dies, die nuts, thread files etc.
- (j) Bending of pipe by use of Hydraulic bending Machine.
- (k) Care and Storing of hand tools, power tools.

5. Perform Workplace Communication.

- (a) Term roles and responsibilities are identified in terms of structure, purpose.
- (b) Ideas, information and opinions relevant to the task are contributed, classification and information should be collected from group members.
- (c) View points to be clarified, points raised by other group should be answered (to avoid interruption).
- (d) Consensus is attained from all group members.
- (e) Information is accessed from appropriate sources to ensure affective Communication skills applied to inform the groups.
- (f) Assistance is provided to colleagues in the workplace as necessary.
- (g) Requests from colleagues are met properly and willingly,
- (h) Workplace goals are identified and performed.
- (i) Records are kept and in accordance with workplace enterprise, procedures and Government regulations.
- (j) Information is complete, concise and logically organized to achieve target.



6. Apply Welding and Soldering Techniques in Plumbing

- (a) Method of using OXY - acetylene arrangement should be explained System of operating OXY - acetylene plant.
- (b) Method of gas welding, Soldering, Brazing, Heating metal for shaping and cutting. Welding and Brazing procedure and materials required.
- (c) Welding faults and its causes, use of protection and safety guard during Welding.
- (d) Inspection of gas cylinders pressure regulator, hoses, torches, necessary.

7. Construction of Septic Tanks, Soak wells, well type toilet.

- (a) (i) Drawing of septic tank, Material used for Construction of Septic tank. Function of a Septic tank and the capacity based on users.
(ii) Soak well, construction of soak well, Material used for construction of Soak well.
(iii) Well type toilets, Method of Construction of well type Toilets.
- (b) Method of Estimation based on Septic tank design.
- (c) Fittings like C.I. manhole covers, C.I. pipes for out let inlet.
- (d) (i) Method of Masonry Construction of Septic tank soak wells and well type toilet construction,
(ii) Finishing of Septic tank, Soak Well, Well type toilet.
- (e) Use of Mason's Tools, Knowledge of Brick masonry, use of cement mortar of various proportion, method of bonding bricks in Masonry work.
- (f) Use of cement concrete, method / knowledge of preparing cement concrete mix, (M10, M15)
- (g) Construction of RC. slab for inspection pit, manholes etc.

8. Installation of Plumbing Components Accessories and Fixture.



Detail of Practical Syllabus:

Domestic Water Supply

- (a) Identify different types of pipes used for installation
 - (i) G.I. pipe, cast iron pipe, P.V.C pipe, Glazed soil pipe and the purpose of their use.
 - (ii) Proper materials are identified to different applications.
 - (iii) Appropriate pipe fitting are identified according to I.S standard and method of installation.

- (b) Pipe work for domestic water supply, jointing system threading, bolting etc.
 - (i) Selection of G.I. or P.V.C pipes of various dia for Water supply system,
 - (ii) Joining method by use of appropriate fittings, reduction in dia in case of distribution system,
 - (iii) Set out pipe run and install pipe work for domestic water supply. The work involves setting out alignment of pipe. Marking out, the nos. of tapping to be made by providing fittings,
 - (iv) Materials and equipment, tools required according to work place procedures,
 - (v) Pipe work installed according to job specification and tested.

Sanitary accessories and appliances and there installations

- (i) Identify basic types of pipe work and accessories used for Sanitary System.
- (ii) Sanitary appliances- Sink, wash basin, shower, water closet, urinals, Bath tubs, Explain uses of appliances and procedure of installation,
- (iii) Domestic sanitary service accessories Siphons, drains, strainer, lavatory voles (Flushing system) Traps.
- (iv) Domestic appliances and fitting as positioned to measurement according to layout drawing
- (v) Requirement of installation and operational
- (vi) TEST the installation - Installation is pressure tested for compliance with job specification and standard, Leaks' detected are rectified.
- (vii) Waste pipe lines for disposal of waste water by Concealed drain.
- (viii) Method of installation of Cast Iron, Glazed soil pipes, P.V.C pipes for disposal of waste water,
- (ix) Construction Masonry Manhole, intercepting chambers, Master trap pipe, clamping, and inspection,
- (x) Method of jointing pipes and caulking. Manholes with cover, Conducting smoke test after completion of Installment.

9. Maintain Safety at Work Site.



- (a) Safety at Work site is most essential. Since the plumbing work is conducted at Ground Level, below ground level and at higher elevations above ground level, it is necessary, that adoption of Safe method of work is ensured.
- (b) Sanitary and plumbing Accessories are made of porcelain, cast iron and plastic, there are possibility that careless handling and placing of such item can cause serious damage to the items as well as injury to a plumber.
- (c) Tools like pipe Wrench, Hammer and chisels etc. used by a plumber are heavy items, If those tool drop from a reasonable height it may lead to injury of the plumber.
- (d) (i) Demonstrate Knowledge of Safe working practices on construction sites,
(ii) Carry out safe working practices on construction sites.
- (e) Identify hazards and procedure to avoid accidents at work sites.
- (f) Ensure good house keeping concerning hand tools, portable power tools, scaffolding, excavation of pits, use of ladders, use of chemicals at obscure the concealed erring.
- (g) While lifting heavy items use proper tackles, levels rollers etc. To avoid accidental injury.
- (h) Use of protective Goggles, face shield, safety belt as and when necessary is compulsory,
- (i) Taking undue risk during execution of a job at a construction site should be avoided.
- (j) In any construction site where work is in progress, put up notice for outsiders to avoid the area until the work is completed.

10. Provide Customer relations and estimate a job.

- (a) Obtain the requirement of a customer.
- (b) Importance of customer care and customer services.
- (c) Significance of the good customer and good service to an organization.
- (d) Areas in which standards are identify along with positive attitude for performing the job.
- (e) Communication skill to convince a customer is necessary.
- (f) Analysis of the job and costing should be done and communicated.
- (g) Complete written estimate specifying quality should be given to customer.

11. Demonstration of laying glazed soil pipes, cast iron pipes, P.V.C pipes. Construction of Masonry Manholes, intercepting Chambers, etc.

12. Installation of hand operated Tube Wells, Deep Tube Wells for domestic water supply.

- (a) Hand pump tube wells - the system of hand pump tube wells & its components.
- (b) Materials required for sinking a hand operated tube well,



- (c) Maintenance of tube well to ensure its function,
- (d)
 - (i) Deep tube-wells the system of deep tube wells & its components,
 - (ii) Materials required for sinking deep tube wells.
 - (iii) The electrical pump - pipe line connected to overhead storage tank, supply of electricity.
 - (iv) Maintenance of deep tube wells periodic cleaning of overhead storage tanks.



Tools and Equipment (For abatch of 30 trainees)

TRADE:- Junior Plumber

Sl. No.	Item	Specification	Quantity
Plumbing accessories			
1	Measuring steel tape 3m long		1 no
2	Measuring PVC tape 20m long		1 no
3	Hacksaw		1 no
4	Hammer 1kg size		1 no
5	Spirit level		1 no
6	Spanner		1 set
7	Screw driver set		1 no
8	Bench vice		1 no
9	Pipe wrench		1 no
10	Threading die		1 no
11	Power drill		1 no
12	Power grinder		1 no
13	Pipe Adapter		4 nos
14	Elbow 90° 20 mm ja		4nos
15	Elbow 45° 20 mm ja		4 nos
16	Reducing Elbow (20mm to 15 mm)		2 nos
17	Reducing Tee (20mm to 15 mm)		2nos
18	Tee 20 mm ja		2 nos
19	Tee 15 mm dia		2 nos
20	Nipple 15 mm dia		4 nos
21	Nipple 20 mm dia		4 nos
22	Union 20mm & 15 mm		4 nos each
23	Valve 20 mm dia		1 no
24	G.I.Pipe 20 mm & 12 mm dia – 5m long		1 no
25	P.V.C Pipe 20 mm & 12 mm dia – 5m long		1 no
26	Coupler 20 mm & 15 mm dia		4 nos each
27	Reducer 20 mm & 15 mm dia		4 nos each
28	End cap 20 mm & 15 mm dia		2 nos each
29	Male Threaded Elbow 20 mm & 15 mm dia		4 nos each
30	Male Threaded Tee 20 mm & 15 mm dia		4 nos each
31	Female Threaded Elbow 20 mm & 15 mm		4 nos each



	dia		
32	Female Threaded Tee 20 mm & 15 mm dia		4 nos each
33	Male Threaded adapter 20 mm & 15 mm dia		4 nos each
34	Female Threaded adapter 20 mm & 15 mm dia		4 nos each
35	Ball Valve 20 mm & 15 mm dia		2 nos each
36	Concealed valve 20 mm & 15 mm dia		2 nos each
37	Tank Connector (Male & Female)		
Sanitary accessories			
1	75 mm dia PVC Pipe		4 nos
2	75 mm dia PVC bend 90o & 45o		2 nos
3	75 mm dia PVC bend 90o & 45o with door		2 nos
4	75 mm dia PVC Tee		2 nos
5	75 mm dia PVC Tee with door		2 nos
6	75 mm dia PVC 'Y' connector		2 nos
7	75 mm dia PVC vent cowl		2 nos
8	Pipe Clip with screw for 75 mm dia pipe		10 nos
9	Nahani Trap		1 no
10	'P' type trap		1 no
11	'S' type trap		1 no
12	Bye Pass Bend 75 mm dia		2 nos
13	Pipe jointing solvent		1 no
Sanitary fittings			
1	Kitchen sink with waste coupling		1 no
2	Wash Basin with waste coupling		1 no
3	Water Closet ('P' Type)		1 no
4	Water Closet ('S' Type)		1 no
5	PVC Cistern		1 no
6	Pillar cock for basin		1 no
7	Bib cock		1 no
8	Bib cock for kitchen sink		1 no
Masonry Tools			
1	Brick Trowel (large & Small size)		2 nos
2	Margin Trowel		2 nos
3	Wooden Float		2 nos
4	Metal float		2 nos



5	Plumb Bob		2 nos
6	Right angled scale		2 nos
7	Aluminium hollow rectangular section 1.5 m long		2 nos
8	Masons Hammer		2 nos
9	Water level		2 nos
10	Boning Rod		2 nos
11	Mortar Pan		2 nos
12	Manhole cover(C.I)		1 no
13	Spade		1 no
14	Shovel		1 no

Trainer Requirements

Annexure

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
CTS/ATS	Plumber trade	5	-	-	-	-
Diploma	Civil Engineering / Construction Engineering / Mechanical Engineering	3	-	-	-	-
B. Tech/BE	Civil engineering / Construction Engineering / Mechanical Engineering	2	-	-	-	-
ITI	Plumber Trade	3	-	-	-	-



Trainer Certification	
Domain Certification	Platform Certification
Certified for Job Role: “Junior Plumber ” mapped to QP: “STC - PLM/NSQF -2018/ 801 OR STC - PLM/NSQF -2022/ 3002”. Minimum accepted score is 80%.	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack:“MEP/Q2601”.Minimum accepted score as per MEPSC guidelines is 80%.



Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
CTS/ATS	Plumber trade	5	-	-	-	-
Diploma	Civil Engineering	3	-	-	-	-
B. Tech/BE	Civil Engineering / Construction Engineering / Mechanical Engineering	2	-	-	-	-
ITI	Plumber Trade	5				

Assessor Certification	
Domain Certification	Platform Certification
Certified for Job Role: “Junior Plumber ” mapped to QP: “STC - PLM/NSQF -2018/ 801 OR STC - PLM/NSQF -2022/ 3002”. Minimum accepted score is 80%.	Recommended that the Assessor is certified for the Job Role: “Assessor”, mapped to the Qualification Pack: “MEP/Q2701”. Minimum accepted score as per MEPSC guide lines is 80%.



Assessment Strategy

Assessment will be based on the concept of Independent Assessors empaneled with West Bengal State Council of Technical & Vocational Education & Skill Development (WBSCT&VE&SD), identified, selected, trained and certified on Assessment techniques. These Assessors would be aligned to assess as per the laid down criteria.

WBSCT&VE&SD would conduct assessment only at the training centers or designated testing centers authorized by WBSCT&VE&SD.

Ideally, the assessment will be a continuous process comprising of two distinct steps:

- A. Continuous assessment by Trainers
- B. Term end /Final Assessment by WBSCT&VE&SD

Each National Occupational Standard (NOS) in the respective QPs will be assigned weightage. Each Performance Criteria in the NOS will be assigned marks for theory and/or practical based on relative importance and criticality of function.

This will facilitate preparation of question bank / paper sets for each of the QPs. Each of these papers sets/question banks created by subject matter experts through WBSCT&VE&SD, especially with regard to the practical test and the defined tolerances, finish, accuracy etc.

The following tools are proposed to be used for final assessment:

- i. Written Test: This will comprise of (i) True/False Statements and/or (ii) Multiple Choice Questions and/or (iii) Matching Type Questions. Online system for this will be preferred.
- ii. Practical Test: This will comprise a test job to be prepared as per project briefing following appropriate working steps, using necessary tools, equipment and instruments. Through observation it will be possible to ascertain candidate's aptitude, attention to details, quality consciousness etc.
- iii. Structured Viva-voce: This tool will be used to assess the conceptual understanding and the behavioral aspects as regards the job role and the specific task at hand.



Marks distribution as per outcome

Course Name	Sr No	Outcome No.	Outcome Name	Th Hrs	Pr Hrs	Total marks Th	Total marks Pr
Junior Plumber	1	PLM/ 3002/ OC1	Apply Safe Working Practices	10	20	20	30
	2	PLM/ 3002/ OC2	Identify Hand tools and fittings.	10	20	20	40
	3	PLM/ 3002/ OC3	Identify various types of taps, valves.	10	20	20	30
	4	PLM/ 3002/ OC4	Understand diagrams and drawings used for plumbing and sanitary works	10	20	20	40
	5	PLM/ 3002/ OC5	Identify different layout of plumbing and sanitary pipe networks.	10	20	17	35
	6	PLM/ 3002/ OC6	Detect damage in taps, pipelines, sanitary pipe, plumbing pipe and suggest rectification /repair	20	40	30	70
	7	PLM/ 3002/ OC7	Install the pipe connection to Septic Tanks and well type toilet.	20	40	30	70
	8	PLM/ 3002/ OC8	Construct septic tank, soak well, well type's toilets as per drawing.	10	50	14	90
	9	PLM/ 3002/ OC9	Perform gas welding in metal pipes.	10	50	14	90
	10	PLM/ 3002/ OC10	Work in real job situation with special emphasis on basic safety and hazards in this domain.	0	150	0	270
	11	DGT/VSQ/N0102	Employability Skills- 60 hrs.	24	36	15	35
TOTAL Theory 124 Hrs, Practical 476 Hrs (Including Employability Skill 60 Hrs)						200	800



Glossary

Term	Description
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish or to solve a problem.
Key Learning Outcome	Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training Outcome is specified in terms of knowledge, understanding(theory)and skills (practical application).
OJT(M)	On-the-job training(Mandatory);trainees are mandated to complete specified hours of training on site
OJT(R)	On-the-job training(Recommended);trainees are recommended the specified hours of training on site
Procedural Knowledge	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work, or produce a tangible work output by applying cognitive, affective or psycho motor skills.
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training.
Terminal Outcome	Terminal outcome is a statement of what a learner will know, understand and be able to do upon the completion of a module. A set of terminal outcomes help to achieve the training outcome.

Acronyms and Abbreviations

Term	Description
QP	Qualification Pack
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards