



Model Curriculum (Upskilling Only)

QP Code: PSC/Q0117

QP Version: 2.0

NSQF Level: 4

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Training Parameters

Sector	Water Management and Plumbing
Sub-Sector	Industrial / Non-Industrial Plumbing
Occupation	Plumbing Systems Installation and Maintenance
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/ 7126.9900
Minimum Educational Qualification and Experience	<p>5th Grade Pass with Relevant experience (For RPL) OR 12th grade Pass OR Pursuing 3rd year of 3-year diploma after 10th OR 10th grade pass with 1-year NTC plus CITS (or NAC) OR 8th grade pass with 2-year NTC plus 1-year NAC plus 1-year CITS OR Certificate-NSQF (4 as Plumber - General with 8th Grade Pass) with 1 Year of experience Relevant OR Previous relevant Qualification of NSQF Level (3 as Assistant Plumber - General with 8th Grade Pass) with 2 Years of experience Relevant</p>
Pre-Requisite License or Training	NA
Minimum Job Entry Age	20 Years
Last Reviewed On	24-02-2022
Next Review Date	24-02-2025
NSQF Approval Date	24-02-2022
QP Version	2.0
Model Curriculum Creation Date	21-12-2022
Model Curriculum Valid Up to Date	21-12-2025
Model Curriculum Version	2.0
Minimum Duration of the Course	80 Hours
Maximum Duration of the Course	80 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 learner should have acquired the listed knowledge and skills.

- Perform the steps involved in construction and maintenance activities for water conservation structures in village dwellings, farms and small communities
- Perform installation and operation on HDPE Pipes / MDPE Pipes
- Perform installation and operation on valves, gauges, water meters etc.
- Perform maintenance of supply line and overhead tanks.
- Perform operation and maintenance on water supply pipes, drainage pipes and sanitary fixtures.
- Perform the steps involved in construction and repair related tasks for soak pits and kitchen gardens that re-use grey water.
- Demonstrate How to assess the functionality of IoT based remote monitoring systems used in rural water supply programs.
- Describe the process of operations, maintenance and basic repair of pumps, motors and chlorinators.
- Describe the process of operations and maintenance of water treatment units
- Demonstrate how to assist Village Water and Sanitation Committees (VWSCs) in scheme planning, social mobilization and enhancing community ownership of schemes.
- Employ appropriate practices to carry out service delivery and management activities for rural projects.
- Apply appropriate health and safety practices at the workplace.
- Discuss the importance of working effectively with others.
- Learn employability and entrepreneurship 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	Total Duration
Module 1: Introduction to Jal Jeevan Mission (Har Ghar Nal Ka Jal Scheme) and the job role	01:00 Hours	00:00 Hours	01:00 Hours
Module 2: Introduction to Pipes and various tools, equipment and latest technologies	02:00 Hours	00:00 Hours	02:00 Hours
Module 3: Installation, operations and maintenance of water supply schemes	04:00 Hours	12:00 Hours	16:00 Hours
Module 4: Troubleshooting and maintenance for plumbing systems.	02:00 Hours	08:00 Hours	10:00 Hours
Module 5: Water Conservation	02:00 Hours	01:00 Hours	03:00 Hours
Module 6: Grey Water Management	02:00 Hours	01:00 Hours	03:00 Hours
Module 7: Remote Water Monitoring and Management	01:00 Hours	01:00 Hours	02:00 Hours
Module 8: Water Quality Monitoring	04:00 Hours	12:00 Hours	16:00 Hours
Module 9: Installation of pipeline and new household connection	02:00 Hours	06:00 Hours	08:00 Hours
Module 10: Installation, operation and maintenance of water pump systems and related machinery	03:00 Hours	07:00 Hours	10:00 Hours
Module 11: Workmanship and aesthetics to ensure sustainable environment	01:00 Hours	00:00 Hours	01:00 Hours
Module 12: Social Engagement	01:00 Hours	01:00 Hours	02:00 Hours
Module 13: Service Delivery and Management	01:00 Hours	01:00 Hours	02:00 Hours
Module 14: Health and safety	01:00 Hours	01:00 Hours	02:00 Hours
Module 15: Employability Skills	02:00 Hours	00:00 Hours	02:00 Hours
Total Duration	29:00 Hours	51:00 Hours	80:00 Hours

Module Details

Module 1: Introduction to Jal Jeevan Mission (Har Ghar Nal Ka Jal Scheme) and the job role

Bridge Module

Terminal Outcomes:

- Discuss the relevance and key features of Jal Jeevan Mission.
- Describe the role of Jal Mitra

Duration: 01:00	Duration: 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the relevance of Jal Jeevan Mission. • State the key features of Har Ghar Nal Ka Jal nischay. • List the roles and responsibilities of Jal Mitra. • Explain the concept of functional household tap connection (FHTC). • State the social aspects of Public Health Engineering Department- Public First 	
Classroom Aids:	
Computer, Projector, PowerPoint Presentation and software, Facilitator’s Guide, Participant’s Handbook	

Module 2: Introduction to Pipes and various tools, equipment and latest technologies

Bridge Module

Terminal Outcomes:

- Discuss different types of pipes and piping systems.
- Describe tool and measuring device proficiency.
- Explore and discuss the latest technologies in the field of plumbing system.

Duration: 02:00	Duration: 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Describe the basic principles and components of pipe systems. • Identify the properties and characteristics of G-I, CI, DI, HDPE and MDPE pipes, including their strengths, weaknesses and applications • Understand the different types of pipes such as G-I, HDPE, MDPE, CPVC, UPVC, PEX, PPR, SS, CI and DI Pipes. • Identify and correct use of hand tools, power tools and measuring devices, used in plumbing. • Understand the principles of pipe alignment and leveling during installation. • Explore sustainable practices and technologies in pipe maintenance. 	
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator’s Guide, Participant’s Handbook	

Module 3: Installation, operations and maintenance of water supply scheme

Bridge Module

Terminal Outcomes:

- Identify the requirements for G-I/CI/DI/HDPE / MDPE Pipes.
- Describe installation procedure for G-I/CI/DI/HDPE / MDPE Pipes.
- Demonstrate repair and maintenance techniques for G-I/CI/DI/HDPE / MDPE Pipes.
- Demonstrate the cutting process, joining and assembling of water supply pipes.
- Perform the installation of the pipes, fittings and tap.
- Perform installation of water storage tanks.

Duration: 04:00	Duration: 12:00
Theory – Key Learning Outcomes <ul style="list-style-type: none"> • Understand procedures for the installation of G-I, CI, DI, HDPE and MDPE pipes in water supply schemes. • Explain the process of water distribution in municipal, residential, and private setups. • List the process and various components of a water supply and distribution scheme. • State the piping layouts for various types of water supply scheme. • Outline the installation procedure of pipes and fittings in plumbing. • Describe the different techniques of installing the piping system in a building such as over ground piping, trench piping, concealed piping. • Explain the application of the different types of pipe support system. • List the types, characteristics and the application of different pipe support system. • Discuss the fixing and jointing techniques. • Describe the procedures pre commissioning. • Understand the importance of correct installation of water storage tank • Able to understand the factors like water demand, population served, peak usage periods, and climatic conditions to ensure adequate supply and distribution. • Understand the procedure for installation/concept of water storage tank. 	Practical – Key Learning Outcomes <ul style="list-style-type: none"> • Demonstrate proficiency in using general tools for installation and maintenance. • Demonstrate proper techniques for cutting, threading, and joining of G-I, HDPE and MDPE pipes. • Demonstrate the procedure for hot fusion Welding Machine. • Demonstrate the process of installation of G-I, CI, DI, HDPE, MDPE Pipes with its fittings. • Demonstrate effective techniques for repairing leaks and maintaining the integrity of the water supply system • Demonstrate the process of clamping of pipes • Determine the fitting requirements for water supply pipe installations. • Demonstrate the steps involved in the installation of water supply pipes, fittings and components in buildings. • Perform post installation activities such as clearing the work area, disposal of waste and cleaning and storage of tools and equipment. • Demonstrate the installation of tap and bibcock
Classroom Aids: Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook	

Module 4: Troubleshooting and maintenance for plumbing systems

Bridge Module

Terminal Outcomes:

- Demonstrate how to inspect of plumbing systems to identify faults.
- Perform repair and maintenance (preventive and corrective) activities.
- Perform maintenance and cleaning of water storage tanks.

Duration: 02:00	Duration: 08:00
<p>Theory – Key Learning Outcomes</p> <ul style="list-style-type: none"> • List the various types of faults (such as leakages, improper joints, leaking/blocked sewer, low pressure, low discharge and dripping tap. • List the testing procedures to be performed to check proper functioning of the fixtures and pipework installed. • State the remedial and preventive measures for common plumbing problems with respect to fixtures, pipes and fittings. • Discuss various practices for troubleshooting and maintenance for plumbing fixtures and systems. • maintenance strategies, such as periodic inspection schedules, maintenance logs. • Identify and interpret relevant regulatory standards and guidelines for the maintenance and cleanliness of water storage tanks, such as those from the local health authorities. • Implementation of best practices to prevent contamination and ensure the longevity and functionality of water storage tanks. 	<p>Practical – Key Learning Outcomes</p> <ul style="list-style-type: none"> • Show how to diagnose faults in plumbing systems • Identify common issues that can occur in water storage tanks, such as leaks, structural damage, or signs of contamination. • Demonstrate procedures involved in repair and rectification of common faults within the pipes, plumbing fixtures, drainage and water supply systems. • Demonstrate how to record daily logs in a specified format for activities. • Role-play a situation on how to guide the customers/instruct the customers on proper care and maintenance of plumbing systems. • Perform the step-by-step procedures for cleaning and disinfecting water storage tanks, including the safe handling and application of cleaning agents, scrubbing, rinsing, and ensuring thorough disinfection. • Accurately document all monitoring results, cleaning schedules, and maintenance activities in a systematic manner.
<p>Classroom Aids:</p> <p>Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator’s Guide, Participant’s Handbook</p>	

Module 5: Water Conservation

Mapped to PSC/N0146, v 1.0

Terminal Outcomes:

- Discuss the methods for water conservation in village and communities.
- Outline the activities involved in planning and constructing water conservation structures.
- Discuss the procedure to carry out repair and maintenance related activities for water conservation structures.

Duration: 02:00	Duration: 01:00
<p>Theory – Key Learning Outcomes</p> <ul style="list-style-type: none"> • Discuss the global, national and regional water crises scenario. • List the criteria for selection of a simple water conservation structure Suitable. • Explain various water conservation structures and their applications, such as, contour trenches, ponds, watersheds, Rainwater harvesting structures and check dams. • Explain the need for ensuring sustainability of the water conservation structures. • List out the activities involved in planning and constructing water conservation structures. • Discuss the role of community and organizations in water conservation. • Elucidate water conservation plans for villages. • State the measures taken to avoid air and water contamination, erosion and sedimentation while collecting and storing water in water conservation structures. 	<p>Practical – Key Learning Outcomes</p> <ul style="list-style-type: none"> • Demonstrate the tasks related to construction of water harvesting structures by performing masonry works including bricklaying, preparation of mortar, concrete etc. • Demonstrate the cleaning and maintenance activities that are performed regularly on water harvesting structures. • Show the steps to repair faulty water harvesting structures.
<p>Classroom Aids: Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator’s Guide, Participant’s Handbook</p>	

Module 6: Grey Water Management

Mapped to PSC/N0147, v 1.0

Terminal Outcomes:

- Discuss the need and solutions for grey water management in village, wards and communities.
- Outline the activities involved in construction of soak pits and kitchen gardens for re-use of grey water in households and communities.

Duration: 02:00	Duration: 01:00
<p>Theory – Key Learning Outcomes</p> <ul style="list-style-type: none"> • Understand the difference between Grey and Black water. • List different kinds of grey water sources in households. • Discuss the benefits of grey water management at both household and community level. • Discuss about quality of grey water and its risk assessment. • List the various technologies for grey water management at household and community level. • Discuss the role of community and organizations in grey water management • Recall key factors to be considered while making the village action plan for greywater management. 	<p>Practical – Key Learning Outcomes</p> <ul style="list-style-type: none"> • Calculate the average estimating the average grey water generation for a household per day. • Identify the grey water and black water.
<p>Classroom Aids: Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator’s Guide, Participant’s Handbook</p>	

Module 7: Remote Water Monitoring and Management

Mapped to PSC/N0148, v 1.0

Terminal Outcomes:

- Discuss the role of sensors and IoT based equipment in remote water monitoring and management.
- Demonstrate various activities involved in assessing the functionality of IoT based remote monitoring systems used in rural water supply programs.

Duration: 01:00	Duration: 01:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • List various types of sensors and their applications. • Recall different types of IoT based equipment used in remote water monitoring and management like SCADA system. • Identify the components of IoT based Piped Water Monitoring System. • Discuss the information available from the dashboards of remote water monitoring systems. • Explain the importance of maintenance of IoT based remote water monitoring systems. • Explain the basic function of automatic water level controller. • Discuss the process of basic troubleshooting of common faults that could occur in an IoT based remote water monitoring system. 	<ul style="list-style-type: none"> • Perform the steps involved in reading and interpreting the dashboard of the IoT based remote water monitoring system. • Show how to check if appropriate supply of water and current is available to the equipment. • Perform the steps to check the cables for any damage or improper usage. • Show how to check if appropriate analogue/digital signal is received from the sensor at the equipment terminal. • Perform the steps to troubleshooting of the remote monitoring system.
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator’s Guide, Participant’s Handbook	

Module 8: Water Quality Monitoring

Mapped to PSC/N0148, v 1.0

Terminal Outcomes:

- Understand the different types of water contamination
- Potential cause for water contamination
- Monitor and maintain water quality

Duration: 04:00	Duration: 12:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the need and importance of water quality. • Describe drinking water quality requirements as per IS 10500. • Explain the water sample collection method, frequency, schedule, source, etc., • Explain the physical, chemical and biological water quality parameter. • Explain the significance of different color coding in the Field-testing kit (FTK). • Describe the probable reason for water contamination (biological, physical and chemical) • Outline the different methods of disinfection like chlorination, ozonation, UV • Describe the health impacts due to consumption of contaminated water. • Describe the possible damage that can occur in supply system due to poor water quality and vice-versa. • Understand the importance of disinfection of water. • Understand the sanitary survey and its impact on drinking water (location of toilets, soak pits, mixing of drain water in drinking water) • Describe the Health effect of Iron, Arsenic and Fluoride. • Brief Process description of Iron, Arsenic and fluoride removal technique in Different Vessels. • Brief Introduction to Different type of Media used in treatment of water treatment plant for removal of Iron, Arsenic and Fluoride . • Operating Protocol of Filtration and Backwash of treatment unit. • Operating protocol for operation of equipment used in water treatment unit. 	<ul style="list-style-type: none"> • Identify different water sampling process from the source of water as per guidelines. • Collect water samples from the different drinking water source. • Test water quality using a field test kit for physical, chemical and biological parameters. • Preserve and dispatch samples to approved laboratory for testing. • Analyze and interpret test report from waterquality report. • Match physical, chemical, and biological water quality parameters to drinking water source. • Determine and apply the correct dosage of disinfectants such as chlorine, chloramine, or hydrogen peroxide, ensuring effective elimination of pathogens without harmful residuals. • Safely handle and store disinfectants, understanding the potential hazards and required precautions to prevent accidents and ensure their effectiveness. • Perform regular maintenance and calibration of disinfection equipment to ensure consistent and reliable operation, following manufacturer guidelines. • Measure and manage residual disinfectant levels in the treated water to ensure they are within safe limits for human consumption and comply with regulatory standards. • Accurately document the disinfection process.
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator’s Guide, Participant’s Handbook	

Module 9: Installation of pipe line and new household connection

Mapped to PSC/N0148, v 1.0

Terminal Outcomes:

- Permission and approvals required from local authorities
- Understand the different types of water pipe line.
- Demonstrate the installation of pipelines and new household connections.

Duration: 02:00	Duration: 06:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Understand different types of piping system like dead-end, grid, radial and ring system. • Understand advantage and disadvantages of above pipeline system • Familiarize with Local guidelines for new connection • List the different types of pipes and fittings required for new connection • Understand the process of providing new connections (digging, excavation, trenching, backfilling) • Understand the process of taping for new connections using saddles with correct tools • List out the steps required for Installation of water meter. • Understand functional requirement for new connection like discharge, pressure, leakage • Understand the installation of new line connections, including cutting, and jointing HDPE and G-I pipes. 	<ul style="list-style-type: none"> • Describe the process of new connection installation of HDPE / MDPE/G-I Pipes with its fittings by means of hot fusion joint. • Demonstrate effective techniques for repairing leaks and maintaining the integrity of the water supply system • Demonstrate the process of clamping of pipes. • Demonstrate installation of saddle into the pipeline. • Demonstrate reading of water meter.
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator’s Guide, Participant’s Handbook	

Module 10: Installation, operation and maintenance of water pump systems and related machinery

Mapped to PSC/N0148, v 1.0

Terminal Outcomes:

- Prepare of installation.
- Install water pump and related equipment.
- Check the installation of pump
- Perform operation of various types of pumps
- Perform electrical connection of pumps

Duration: 03:00	Duration: 07:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • List the preparatory requirements for pump system installation. • List the tools and materials used in pump installation. • State the units of measurements used during the preparation, installation and checking of water pumps. • State the steps involved in calculating material requirements. • State the types of water supply and their implication on pumping system. • Explain the importance of referring to the manufacturers’ specifications and standard Operating Procedures (SOPs) related to the installation and fitting of pumps. • Describe the procedure of installing water pumps. • State some common dos and don’ts of various pumping systems. • Explain the importance of ensuring prevention of any contact of water and electrical connections with each other during the process. • Describe levelling and alignment procedures. • List the different types of pumping apparatus (reciprocating, rotary etc.) and associated equipment and purposes. • List the basic fittings (valves, clamps, elbows, etc.) in the pumping apparatus. • List the gauges, dials, monitoring apparatus and their purpose. • List the different types of valves and their functioning (stop valve, non-return valve, etc.) 	<p>Assemble pump components and equipment.</p> <ul style="list-style-type: none"> • Demonstrate the prechecks for before switch on the pumps (voltage, Phase indication) • Demonstrate checks during the operation of the pumps. (current, voltage, direction of rotation, etc) • Prepare the tools, area and materials for the task. • Locate and mark position for inlet and outlet supply connections of pump. • Fix the pump at the designated location as per instruction. • Connect the hoses of inlet and outlet supply to the pump. • Make provisions for electrical and other required connections. • Install and connect pump components without any damage to pump, fixture, pipe work, the surrounding environment, or to other services. • Adjust pressure/flow as per required supply and demand. • Check installed pump systems for correct functioning and compliance with specifications. • Check for cracks, defects and anomalies in the pumping apparatus. • Check for condition of couplings in the equipment and pumping on both suction and discharge sides. • Check the oil level, fuel level, radiator coolant and engine condition of a diesel operated pump.

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| <ul style="list-style-type: none"> • State the importance of working as per the standards, policies, and procedures followed in the company relevant to employment and performance conditions. • Describe the material disposal procedure to be applied after installation and its importance. • Describe the process for condition monitoring of the equipment. • Explain the importance of adhering to workplace safety requirements, hazard reporting and handling procedures during installation and checking of water motor pump systems and related equipment. • Understand the procedure for the installation of tubewell pumps. | <ul style="list-style-type: none"> • Check air release valve and prime the pump. • Demonstrate the installation of tube well. • Developing contingency plans for emergencies such as equipment malfunction, drought, or contamination events to maintain water supply continuity and safeguard public health • Demonstrate the discharge measurement. |
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Classroom Aids:

Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook

Module 11: Workmanship and Aesthetics to ensure sustainable environment

Mapped to PSC/N0148, v 1.0

Terminal Outcomes:

- Understand the role of quality workmanship and aesthetics in water supply systems
- Explore innovative techniques for water conservation
- Learn methods to ensure sustainability and groundwater replenishment.
- Identify the best practices in design, construction and maintenance of water supply system

Duration: 01:00	Duration: 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Ensure quality workmanship by adopting high standards of construction and maintenance to ensure durability and efficiency • Ensure the visual appeal and integration of water supply systems into the environment by thoughtful design, landscaping, and integration with natural surroundings. • Familiar with smart water management system which includes real-time monitoring of water usage and leak detection efficient regulation of water flow and pressure. • Familiar with low-Flow Fixtures such as toilets, showers, and faucets designed to reduce water use. • Familiar with washing machines and dishwashers with higher efficiency ratings. • Understand the adaptability of existing systems with water-saving technologies. • Understand sustainable design principles for the use of recycled and locally sourced materials including solar-powered pumps and low-energy treatment processes keeping in mind the designing systems with long-term sustainability. • Understand the importance of structures to direct water back into underground aquifers. • Understand the importance of paving and landscaping that allow water infiltration. • Understand the controlled methods to replenish groundwater supplies. 	
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator’s Guide, Participant’s Handbook	

Module 12: Social Engagement

Mapped to PSC/N0149, v 1.0

Terminal Outcomes:

- Perform the steps to gather data for planning of social engagement schemes.
- Demonstrate various community mobilization activities aimed at enhancing participation and ownership.

Duration: 01:00	Duration: 01:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss various solutions and schemes related to water conservation and efficient water usage. • State the data and information required for planning various water conservation and efficient water usage solutions and schemes. • Explain how to obtain required data for water conservation. • Explain the importance of data verification and data triangulation. • Explain the importance of verifying data and information collected before handover to the relevant authorities. • Discuss basic water quality mapping and water budgeting concepts and practices. • Explain how to undertake drinking water quality tests for the geographic area. • Explain how to identify location in the community where water quality boards can be put up. • Discuss the role of community and importance of mobilizing community members for successful implementation of water conservation and efficient water usage practices and schemes. • List the stakeholders involved in selection and implementation of water conservation and efficient water usage solutions and schemes. • Share insight on conducting participatory rural appraisal (PRA) activities, structure and how to engage communities in it. 	<ul style="list-style-type: none"> • Demonstrate key steps involved in conducting a survey to estimate the water requirements in consultation with the Village Water and Sanitation Committee (VWSC). • Demonstrate the activities involved in collating community related data and suggestions for water conservation, grey water re-use and water usage efficiency potential. • Apply appropriate techniques to conduct a stakeholder analysis. • Role play enrolment conversations with communities aimed at getting them to participate in various schemes for water conservation and water usage efficiency practices. • Dramatize co-ordination activities with the village committees and gram panchayat for implementation of schemes for water conservation and efficient water usage. • Demonstrate the activities involved in setting up water quality board at gram panchayat to ensure proper planning, cleaning and maintenance of water harvesting structures. • Demonstrate the activities involved in conducting workshops, distributing flyers, organizing rallies and other awareness building activities as part of promotion campaigns. • Dramatize the training to various local level stakeholders for use and care of the systems and structures installed. • Dramatize the jal chaupal to discuss the seriousness of water.

- Describe how to create a roadmap for participatory rural appraisal (PRA) activities.
- State the roles and responsibilities of village water and sanitation committee (VWSC) and other rural committees
- Discuss the social and behavioral change required at the community level.
- Describe various types of campaigns and campaign activities used in rural social engagement schemes.
- Explain the importance of ensuring participation of diverse social groups of the village from different religions, castes and age groups for triangulation
- State the importance of awareness building of community members and other stakeholders.
- Discuss the importance of initiating dialogue and discussion between community members to find solutions on critical issues like health, sanitation, hygiene, etc.
- List key features of tools and techniques that will engage the community members.
- State the importance of providing suggestions for building effective community engagement tools and techniques aligned with local requirements.
- Explain the key aspects of cleanliness and maintenance of water conservation structures.
- Explain the various level of gradience redressal procedures defined by the department.
- Explain various social engagement activities such as Jal Chaupal and social audits

Classroom Aids:

Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook

Module 13: Service Delivery and Management

Mapped to PSC/N0150, v 1.0

Terminal Outcomes:

- Discuss various concepts of service delivery and management.
- Demonstrate various service delivery and management activities.

Duration: 01:00	Duration: 01:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the importance of planning and time management. • Discuss the process of planning for efficient delivery of projects. • List the key tools for effective planning. • Discuss how to identify the needs and requirements of the client and the objectives to be achieved. • Describe the process of estimation and costing of materials and labour. • State the importance of sharing the plan with the stakeholders for approval and suggestions. • Elucidate how to arrange for resources as per plan from authorized sources. • State the importance of maintaining quality, continuity and cost effectiveness. • State the importance of reviewing the work to ascertain if the objectives are met. • Explain how to evaluate quality of work and check if any further action is required to enhance service delivery. • State the importance of seeking feedback from stakeholders about the work done. • State the importance of maintaining records of materials consumed and inventory. • Explain the basic accounting principles for micro enterprise. • Explain how to calculate margins and cash-flow. • Discuss the opportunities for increasing cost effectiveness while maintaining quality and continuity. 	<ul style="list-style-type: none"> • Develop a sample checklist a check list of tasks and schedule of activities to achieve the objectives. • Calculate the estimate and cost of the materials and labor required. • Apply appropriate techniques in implementing a plan with the support of stakeholder. • Show how to maintain records of the materials consumed and inventory. • Show how to maintain accounts for incomes/revenues, expenses, margins and cash-flows.
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator’s Guide, Participant’s Handbook	

Module 14: Health and safety

Mapped to PSC/N0136, v 1.0

Terminal Outcomes:

- Describe the various risks and hazards at the workplace and their preventive and corrective measures
- Employ preventive and corrective measures to protect self and others from common workplace hazards and risk

Duration: 01:00	Duration: 01:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Differentiate between risks and hazards. • Discuss the specific safety and health related problems faced in domestic, commercial and institutional setups. • List the various types of hazards (such as physical, fire, chemical compounds and electrical) that could affect the work process. • List the various hazardous environments and common hazards that can occur during plumbing installation and maintenance along with their precautions and remedial measures. • Discuss the importance of various types of personal protective equipment (PPE). • Discuss where the general health and safety equipment commonly is kept at the workplace. • Explain the various types of safety signs and their significance in the work process. • Discuss various causes of fire and precautionary activities to prevent the fire accident. • List the different techniques that employ various methods (such as using extinguishers, water hose, sprinklers, sand bucket, wet blanket, etc.) and materials such as water, powder, foam, CO₂, fire extinguishing chemical, sand, blanket, etc. used for extinguishing fire as per the type (as per class A, B, C and D). • Describe rescue techniques applied during a fire hazard or electrocution. • Discuss appropriate basic first aid treatment relevant to the condition e.g. shock, electrical shock, bleeding, minor burns, poisoning, eye injuries etc. 	<ul style="list-style-type: none"> • Perform inspection of a work area in order to identify risks and hazards. • Apply various health and safety precautions to be taken during plumbing work. • Apply personal and workspace hygiene and sanitation practices. • Dramatize workplace emergency and evacuation procedures using role plays. • Demonstrate the correct use of fire extinguishers. • Dramatize, using role play, safe methods of freeing a person from electrocution. • Perform appropriate first aid treatment for various conditions such as bleeding, burns, choking, electric shock and poisoning and injury. • Demonstrate the process of providing cardiopulmonary resuscitation (CPR). • Demonstrate the safety from the gas the gas correlator.
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator’s Guide, Participant’s Handbook	

Module 15: Employability Skills

Mapped to DGT/VSQ/N0102, v 1.0

Terminal Outcomes:

- Describe the importance and values of employability skills and apprenticeship opportunities to meet job demands.
- Explain basic communication skill, digital and financial literacy skills for customer-oriented outcome.

Duration: 02:00

Theory – Key Learning Outcomes

- Discuss the Employability Skills required for jobs in various industries
- List different learning and employability related GOI and private portals and their usage
- Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen
- Discuss importance of relevant 21st century skills.
- Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life.
- Describe the benefits of continuous learning.
- Explain the importance of active listening for effective communication
- Discuss the significance of working collaboratively with others in a team
- Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD
- Discuss the significance of escalating sexual harassment issues as per POSH act.
- Outline the importance of selecting the right financial institution, product, and service
- Demonstrate how to carry out offline and online financial transactions, safely and securely
- List the common components of salary and compute income, expenditure, taxes, investments etc.
- Discuss the legal rights, laws, and aids.
- Describe the role of digital technology in today's life.
- Demonstrate how to operate digital devices and use the associated applications and features, safely and securely
- Discuss the significance of displaying responsible online behavior while browsing, using various social media platforms, e-mails, etc., safely and securely
- Utilize virtual collaboration tools to work effectively
- Explain the types of entrepreneurship and enterprises
- Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan
- Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement
- Create a sample business plan, for the selected business opportunity
- Describe the significance of analyzing different types and needs of customers
- Explain the significance of identifying customer needs and responding to them in a professional manner.
- Discuss the significance of maintaining hygiene and dressing appropriately

- Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively
- Discuss the significance of maintaining hygiene and confidence during an interview 36.
Perform a mock interview
List the steps for searching and registering for apprenticeship opportunities

Classroom Aids:

Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook

ANNEXURES

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
B. Tech/ B.E.	Civil or Mechanical Engineering	3	Plumbing or Water Management or Public Health Department	2	Plumbing	
Diploma	Civil or Mechanical Engineering	4	Plumbing or Water Management or Public Health Department	2	Plumbing	
CITS Certified Trainer	Plumbing					
Graduate in Science	B.Sc/ Environment Science	3	As Trainer /Practical/ field work with any Company/ Freelancer	1	Plumbing	

Trainer Certification	
Domain Certification	Platform Certification
Certified for Job Role: "Jal Mitra" mapped to QP: "PSC/Q0117, v2.0". Minimum accepted score is 80%.	Recommended that the Trainer is certified for the Job Role: "Trainer (VET and Skills)", mapped to the Qualification Pack: "MEP/Q2601 (v 2.0)" (NSQF Level – 5). Minimum accepted score as per MEPC guidelines is 80%.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training / Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
B. Tech/ B.E.	Civil or Mechanical Engineering	5	Plumbing or Water Management or Public Health Department	2	Plumbing	
Diploma	Civil or Mechanical Engineering	7	Plumbing or Water Management or Public Health Department	2	Plumbing	

Trainer Certification	
Domain Certification	Platform Certification
Certified for Job Role: “Jal Mitra” mapped to QP: “PSC/Q0117, v2.0”. Minimum accepted score is 80%.	Recommended that the Trainer is certified for the Job Role: “Assessor”, mapped to the Qualification Pack: “MEP/Q2701 (v 2.0)” (NSQF Level – 5). Minimum accepted score as per MEPSC guidelines is 80%.

Assessment Strategy

Assessment is done through third parties who are affiliated to IPSC as Assessment Body. Assessors are trained & certified by IPSC through Training of Assessors program. The assessment involves two processes. The first process is gathering the evidence of the competency of individuals. The second part of the assessment process is the judgement, based on the evidence as to whether a person is competent as per the standard or not. The assessment plan contains the following information:

- What will be assessed, i.e. the competency based on each NOS
- How assessment will occur i.e. methods of assessment
- When the assessment will occur
- Where the assessment will take place i.e. context of the assessment (workplace/simulation)
- The criteria for decision making i.e. those aspects that will guide judgements and
- Where appropriate, any supplementary criteria used to make a judgement on the level of performance.

The assessment is conducted through theory, practical and viva.

Acronyms and Abbreviations

Term	Description
NCVET	National Council for Vocational Education and Training
WMPSC	Water Management and Plumbing Skill Council
QP	Qualification Pack
MC	Model Curriculum
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards
NCO	National Classification of Occupations
ES	Employability Skills