



Model Curriculum

QP Name: Assistant Plumber - General

QP Code: PSC/Q0102

QP Version: 5.0

NSQF Level: 3

Model Curriculum Version: 5.0

Water Management and Plumbing Skill Council || Unit- 606 & 609, Tower-C, DLF Prime Towers, Phase-1, Okhla, Delhi, 110020

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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	3
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7126.0105
Minimum Educational Qualification and Experience	10th grade pass OR 8th grade pass with 2 years of NTC OR 8th grade pass with 2 Years of experience Relevant OR 5th grade pass with 5 Years of experience Relevant
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 years
Last Reviewed On	17-12-2024
Next Review Date	17-12-2027
NSQC Approval Date	17-12-2024
QP Version	5.0
Model Curriculum Creation Date	17-12-2024
Model Curriculum Valid Up to Date	17-12-2027
Model Curriculum Version	5.0
Minimum Duration of the Course	360 Hours
Maximum Duration of the Course	360 Hours

Program Overview

This program is for training the candidates to become competent as an Assistant Plumber General so that s/he assists the plumber in installation and repair of plumbing fittings and fixtures.

Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills.

- Prepare the work area, tools and materials for plumbing tasks
- Carry out basic plumbing related tasks such as handing over tools, fit off of pipes, securing the pipes and fixtures, etc.
- Maintain plumbing tools and equipment
- Adhere to health and safety practices at the workplace
- Work in an effective manner
- Optimize resource utilization at the workplace

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
PSC/N0187: Support Plumbing Installation. NOS Version No.: 1.0 NSQF Level: 3	35:00 Hours	60:00 Hours	25:00 Hours	00:00 Hours	120:00 Hours
Module 1: Introduction to the sector and the job role	05:00 Hours	00:00 Hours	00:00 Hours	00:00 Hours	05:00 Hours
Module 2: Basics of plumbing	10:00 Hours	20:00 Hours	00:00 Hours	00:00 Hours	30:00 Hours
Module 3: Basic tasks to facilitate Support work in Plumbing Installation	20:00 Hours	40:00 Hours	25:00 Hours	00:00 Hours	85:00 Hours
PSC/N0140: Maintain Plumbing Tools and Equipment. NOS Version No.: 2.0 NSQF Level: 3	35:00 Hours	60:00 Hours	25:00 Hours	00:00 Hours	120:00 Hours
Module 4: Maintaining the plumbing tools and equipment	35:00 Hours	60:00 Hours	25:00 Hours	00:00 Hours	120:00 Hours
PSC/N0188: Perform Repair and Maintenance of	20:00 Hours	45:00 Hours	10:00 Hours	00:00 Hours	75:00 Hours

Plumbing System Post Installation. NOS Version No.: 1.0 NSQF Level: 3					
Module 5: Perform Repair and Maintenance of Plumbing System Post Installation	20:00 Hours	45:00 Hours	10:00 Hours	00:00 Hours	75:00 Hours
PSC/N0136: Apply Health and Safety Practices at the Workplace NOS Version No.: 2.0 NSQF Level: 3	10:00 Hours	05:00 Hours	00:00 Hours	00:00 Hours	15:00 Hours
Module 6: Health and safety	10:00 Hours	05:00 Hours	00:00 Hours	00:00 Hours	15:00 Hours
DGT/VSQ/N0101: Employability Skills (30 Hours) NOS Version No.: 1.0 NSQF Level: 2	20:00 Hours	10:00 Hours	00:00 Hours	00:00 Hours	30:00 Hours
Module 7: Employability Skills	20:00 Hours	10:00 Hours	00:00 Hours	00:00 Hours	30:00 Hours
Total Duration	120:00 Hours	180:00 Hours	60:00 Hours	00:00 Hours	360:00 Hours

Module Details

Module 1: Introduction to the sector and the job role

Bridge Module

Terminal Outcomes:

- Explain the importance of plumbing industry
- Discuss the key responsibilities of an assistant plumber general

Duration: 05:00	Duration: 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Outline the overview of the plumbing industry. • List the common types of plumbing systems that are installed in residential setups. • Discuss the scope of employment in the contracting segment of the industry. • List the key responsibilities of an assistant plumber general. 	
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Nil	

Module 2: Basics of plumbing

Mapped to PSC/N0187, v 1.0

Terminal Outcomes:

- Identify the various plumbing related systems, materials, tools and equipment.
- Summarize the common terms, symbols and jargon used in plumbing.

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the process of mains supply of water and drainage. • Identify the various types of symbols and terminologies used in plumbing installation and maintenance. • Describe the International System (SI) of measurement relevant to plumbing work. • State the names, characteristics and applications of different pipes, pipe fittings, fixtures supports and materials used in plumbing. • Discuss the uses and limitations of various types of fixtures. • List the types and grades of pipes, fittings, fastening hardware (such as anchors, studs, bolts, clamps and nuts), supports, restraints, blocking and wall hangers and their properties. • Describe the installation process of pipes and fittings for various plumbing applications. • Identify various plumbing tools and equipment correctly. • Describe the commonly used corrosion protection measures such as applying coatings and using tape. • Discuss quality procedures and standards commonly used by organisations in plumbing related work. 	<ul style="list-style-type: none"> • Perform the operations in the main supply of water and drainage • Identify different types and grades of pipes, fittings, fastening hardware (such as anchors, studs, bolts, clamps and nuts), supports, restraints, blocking and wall hangers and their properties. • Perform different operations involved in installation of different grades of pipes and fittings. • Perform installation of fastening hardware, supports, restraints, blocking and wall hangers. • Demonstrate the various plumbing tools and equipment • Demonstrate different operations involved with plumbing tools and equipment.
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Pipes (such as PVC, cPVC, uPVC, mild steel, cast iron, galvanised iron), fittings, plumbing fixtures, plumbing accessories, tools, solvent cement, power tools, mechanical fasteners (such as nuts, bolts, screws).	

Module 3: Basic tasks to facilitate Support Work in plumbing Installation

Mapped to PSC/N0187, v 1.0

Terminal Outcomes:

- Follow instructions for installation, communising and maintenance of the plumbing work
- Support senior plumber

Duration: 20:00	Duration: 40:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the importance of obtaining clarity about the tasks to be performed and following instructions and standard operating procedures. • Discuss the importance of unpacking of plumbing materials safely and in compliance with the manufacturer's guidelines. • Explain the process of checking and reporting shortage of materials as per specifications. • State the precautions to be observed while operating hand tools and power tools. • Discuss the various pipe fit off processes employed in plumbing work such as cutting, bending, forming, assembling and securing of plumbing pipes and fittings. • Explain the installation of pipe insulation for hot water distribution. • Understand the water supply and drainage system • Enlist the correct usage and handling of plumbing tools. • Understand the basic repair and maintenance knowledge of plumbing tools 	<ul style="list-style-type: none"> • Demonstrate the process of unpacking of plumbing pipes, fittings, fixtures and related materials. • Perform quantity and quality checks of available plumbing materials and equipment. • Show how to use hand tools such as screwdrivers, wrenches and pliers to remove mechanical fasteners like nuts, bolts, screws safely. • Show how to use power tools such as power drill in a safe manner. • Assist in arranging material requirements for the work. • Support in carrying the materials to the work location safely. • Carry out the work as per instruction under the supervision of senior. • use hand and power tools for cutting, bending and assembling pipes and fittings in a safe manner under guidance of senior plumber. • perform cutting, bending and forming of pipes as per drawings or instruction. • Install pipes, fittings and fixtures as instructed by senior plumber. • Measure and check the fixture and/or pipework as per instructions • assist in the pipework or fixture steadily during installation as required. • clear work area and store tools and other plumbing materials safely and as per the specified instructions.
Classroom Aids: Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook	

Tools, Equipment and Other Requirements

Pipes (such as PVC, cPVC, uPVC, mild steel, cast iron, galvanised iron), fittings, plumbing fixtures, plumbing accessories, tools, solvent cement, power tools, mechanical fasteners (such as nuts, bolts, screws).

Module 4: Maintaining the plumbing tools and equipment

Mapped to PSC/N0140, v 2.0

Terminal Outcomes:

- Discuss the need for maintenance of plumbing tools and equipment.
- Perform basic repair and maintenance of plumbing tools and equipment.

Duration: 30:00	Duration: 60:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • List the key considerations in ensuring proper usage and maintenance of plumbing resources (tools, equipment and related materials). • Discuss the importance of referring to documents such as manufacturer guidelines, organisational documents, product catalogues in storing the plumbing resources. • Describe the various types of damages and defects that can occur to the plumbing tools, equipment and materials and their indicators. • Describe the impact of factors such as temperature, pH (acidity levels), chemical composition, oxidation and ageing on plumbing tools, equipment, products and materials. • Explain the processes of prevention and treatment of damaged plumbing tools and equipment. • Describe the various types of lubricants and their application used in the plumbing industry. • Explain the correct material disposal procedures for plumbing waste such as oily rags and other plumbing garbage. • Discuss about new advanced tools, equipment and materials being introduced in the industry. 	<ul style="list-style-type: none"> • Perform the steps to evaluate the extent and type of wear, damage or defect in plumbing tools and equipment. • Demonstrate the procedures of cleaning and maintaining plumbing resources and tools. • Perform disposal of discarded oily rags and waste in a safe manner. • Demonstrate the identification of the reason for underperformance • Demonstrate the repairing of the tools as instructed by expert or manufacturer. • Demonstrate the post repair, check the tools for correct proper operation/working, • Demonstrate the proper disposal of worn-out, defective and exhausted parts/materials. • Identify preventive maintenance requirements of different tools. • Demonstrate the inspection of tools to the operations requirement. • Analyze potential breakdowns and implement corrective actions under expert guidance. • Demonstrate the proper disposal of worn-out, defective and exhausted parts/materials.
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Damp cloth, chemical cleaners, plumbing tools, spray (for removing rust), steel wool, stiff wire brush, bladed tools (such as cutters, filers, pliers, chisels), sharpening tools (such as coarse file, medium-grit sharpening stone), power tools (such as power cords, insulation wires, cord's prongs), industry approved lubricants.	

Module 5: Perform Repair and Maintenance of Plumbing system Post Installation

Mapped to PSC/N0188, v 1.0

Terminal Outcomes:

- Repair of minor defects like leakage and clogs in plumbing system
- Apply repair solution identified by senior/expert plumber
- Describe routine service under expert/senior plumber as per manufacturers recommendation

Duration: 20:00	Duration: 45:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Understand the organizational requirements • Explain the organization's policies on delivery standards, safety and hazards, integrity, dress code, etc. • Elucidate the individual's role and responsibilities in the workflow. • Understand the risk and impact of not following defined procedures/work instructions • Explain the usage of correct plumbing tools and applying correct repair solutions. • Understand customer concerns and expected outcomes. • Understand the specific service requirement of different brands. • Understand different types of post repair checks • Knowledge of safety guidelines 	<ul style="list-style-type: none"> • Identify the root cause for the problem. • Identify and mobilize the space, materials, required. • Demonstrate the guidance of user/customer to prevent the recurrence. • Analyze and understand the repair solutions • Ensure spare and other materials required for repair meet the specifications. • Perform post repair checks and ensure issues are fixed. • Clear the work area and handover to client. • Read and interpret or get guided from experts on brand specific service requirements • Identify/replace parts which requires replacements to prevent failure under guidance or as per manufacturers specification. • Check the system for satisfactory functioning. • Clear work area and handover to customer.
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Damp cloth, chemical cleaners, plumbing tools, spray (for removing rust), steel wool, stiff wire brush, bladed tools (such as cutters, filers, pliers, chisels), sharpening tools (such as coarse file, medium-grit sharpening stone), power tools (such as power cords, insulation wires, cord's prongs), industry approved lubricants.	

Module 6: Health and safety

Mapped to PSC/N0136, v 2.0

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: 10:00	Duration: 05:00
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. • Discuss potential injuries and health 	<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).

problems associated with incorrect handling of tools and equipment.	
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Personal protective equipment (such as eye protector, hard hats, safety belts, gloves, protective clothing), plumbing tools and materials, power tools, required machinery, fire extinguisher, first aid kit.	

Module 7: Employability Skills

Mapped to DGT/VSQ/N0101, v 1.0

Terminal Outcomes:

- Apply Professionalism in the 21st Century
- Able to demonstrate Basic English Skills & Communication Skills including Digital Skills
- Role-play a situation in selecting the right financial institution, product, and service

Duration: 20:00	Duration: 10:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • 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, Behaviour 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. • Demonstrate how to carry out offline and online financial transactions, safely and securely • List the common components of salary and compute income, expenditure, 	<ul style="list-style-type: none"> • Show how to practice different environmentally sustainable practices. • Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone • Read and interpret text written in basic English • Write a short note/paragraph / letter/e-mail using basic English • Create a career development plan with well-defined short- and long-term goals • Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette. • Create sample word documents, excel sheets and presentations using basic features • Create a professional Curriculum Vitae (CV)

<p>taxes, investments etc.</p> <ul style="list-style-type: none"> • 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 behaviour while browsing, using various social media platforms, e-mails, etc., safely and securely • 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 analysing 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	
Tools, Equipment and Other Requirements	
Energy-saving devices, non-recyclable, recyclable and reusable waste	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
B.E. / B. Tech	Civil or Mechanical Engineering	3	Plumbing	1	Plumbing	
Diploma	Civil or Mechanical Engineering	3	Plumbing	1	Plumbing	
10 th +ITI	Plumbing	4	Plumbing	1	Plumbing	
CITS Certified Trainer	Plumbing					

Trainer Certification	
Domain Certification	Platform Certification
Certified for Job Role: "Assistant Plumber – General" mapped to QP: "PSC/Q0102, v4.0". 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	
B.E. / B. Tech	Civil or Mechanical Engineering	3	Plumbing	1	Plumbing	
Diploma	Civil or Mechanical Engineering	3	Plumbing	1	Plumbing	

Assessor Certification	
Domain Certification	Platform Certification
Certified for Job Role: "Assistant Plumber – General" mapped to QP: "PSC/Q0102, v4.0". 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 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, viva voce and practical.

References

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 a task 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 psychomotor 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