Model Curriculum

QP Name: Assistant Plumber - General

QP Code: PSC/Q0102

QP Version: 4.0

NSQF Level: 3

Model Curriculum Version: 4.0

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

Table of Contents

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	27-05-2021
Next Review Date	27-05-2024
NSQC Approval Date	27-05-2021
QP Version	4.0
Model Curriculum Creation Date	27-05-2021
Model Curriculum Valid Up to Date	27-05-2024
Model Curriculum Version	4.0
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/N0139: Carry out Support Activities for Plumbing Work NOS Version No.: 1.0 NSQF Level: 3	**45:00 Hours**	**80:00 Hours**	**25:00 Hours**	**00:00 Hours**	**150:00 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	20:00 Hours	30:00 Hours	00:00 Hours	00:00 Hours	50:00 Hours
Module 3: Basic tasks to facilitate plumbing work	20:00 Hours	50:00 Hours	25:00 Hours	00:00 Hours	95:00 Hours
PSC/N0140: Maintain Plumbing Tools and Equipment NOS Version No.: 1.0 NSQF Level: 3	**45:00 Hours**	**80:00 Hours**	**25:00 Hours**	**00:00 Hours**	**150:00 Hours**
Module 4: Maintaining the plumbing tools and equipment	45:00 Hours	80:00 Hours	25:00 Hours	00:00 Hours	150:00 Hours

PSC/N0136: **Apply Health and** **Safety Practices at** **the Workplace** **NOS Version No.: 1.0** **NSQF Level: 3**	**05:00 Hours**	**05:00 Hours**	**05:00 Hours**	**00:00 Hours**	**15:00 Hours**
Module 5: Health and safety	05:00 Hours	05:00 Hours	05:00 Hours	00:00 Hours	15:00 Hours
PSC/N0137: **Work Effectively** **with Others** **NOS Version No.: 1.0** **NSQF Level: 3**	**05:00 Hours**	**05:00 Hours**	**05:00 Hours**	**00:00 Hours**	**15:00 Hours**
Module 6: Working effectively	05:00 Hours	05:00 Hours	05:00 Hours	00:00 Hours	15:00 Hours
DGT/VSQ/N0101: **Employability Skills** **(30 Hours)** **NOS Version No.: 1.0** **NSQF Level: 3**	**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**
• 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	

![Water Management and Plumbing Skill Council logo]

सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

Skill India
कौशल भारत - कुशल भारत

N·S·D·C
National
Skill Development
Corporation
Transforming the skill landscape

Module 2: Basics of plumbing
Mapped to PSC/N0139, 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: *15:00*	Duration: *00:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- 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.	
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 plumbing work
Mapped to PSC/N0139, v 1.0

Terminal Outcomes:

- Demonstrate the steps involved in preparing for plumbing work.
- Perform supporting tasks in plumbing work.

Duration: *20:00*	**Duration**: *55:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
 - Discuss the importance of obtaining clarity about the tasks to be performed and following instructions and standard operating procedures. (Part of PC1, KU4) - 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 importance of holding the pipework and/or fixture steadily for installation.	 - Demonstrate the process of unpacking of plumbing pipes, fittings, fixtures and related materials. - Perform quantity and quality checks of available plumbing materials and equipment. - Perform the steps of closure or release of water supply to specified fixture and/or pipe as per instructions. - 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. - Perform the steps involved in cutting, bending and forming various types of pipes as per required dimensions. - Apply appropriate techniques to assemble and secure the fixture and/or pipework. - Show how to hold the pipework or fixture steadily during installation, for the plumber. - Perform the activities related to clearance of work area and storage of plumbing tools and materials.
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 1.0

Terminal Outcomes:

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

Duration: *40:00*	**Duration**: *55:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- 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.	- 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.

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: 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: *20:00*	**Duration**: *35:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- 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	- 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 handing 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 6: Working effectively with others
Mapped to PSC/N0137, v 1.0

Terminal Outcomes:

- Apply effective communication techniques.
- Demonstrate teamwork and a positive attitude.
- Demonstrate responsible and disciplined behaviour.

Duration: *10:00*	**Duration**: *15:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- State the importance of effective communication in the workplace. - Describe various categories of people that one is required to communicate and coordinate with, in an organisation. - List various components of effective communication. - State the importance of using inclusive language (verbal, non-verbal and written) that is gender, disability and culturally sensitive. - State the importance of teamwork and developing effective working relationships for professional success. - Discuss the importance and ways of managing interpersonal conflict effectively. - Discuss how to express and address grievances appropriately and effectively. - State the importance of ethics and discipline for professional success. - Explain what constitutes disciplined behaviour and integrity for a working professional. - Discuss the legislation, standards, policies, and procedures relevant to own employment and performance conditions. - Discuss importance of dress code in organisations. - Explain the impact of gender, disability, cultural and age-related biases, stereotyping at the workplace and in society. - List the different types of disabilities and the challenges faced by persons with disability (PwD). - State the laws, acts, provisions and schemes defined for PwD by the	- Demonstrate techniques used for ensuring timely receipt of complete information and instructions from appropriate sources. - Apply practices that improve effectiveness while providing information. - Demonstrate the use of inclusive language (verbal, non-verbal and written) that is gender, disability and culturally sensitive. - Illustrate the use of appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism. - Dramatise a situation to show effective team work. - Dramatize (through role-play) disciplined behaviours at the workplace. - Dramatize (through role-play) the process of scalation of grievances and problems. - Recognize indicators of harassment and discrimination based on gender, disability, caste, religion, colour, sexual orientation and culture at workplace. - Demonstrate practices to eliminate personal bias based on gender, disability, caste, religion, colour, sexual orientation and culture from routine transactions.

Government bodies.
- Discuss gender, disability and cultural biases, stereotypes and impact on others.
- Discuss basic gender concepts such as gender power relations, gender roles, access and control, gender sensitivity, gender equity and equality.
- Discuss the importance of gender sensitivity and equality.
- List the indicators of harassment and discrimination based on gender, disability, caste, religion or culture that occurs at a typical workplace.
- State general organisational norms and procedures applied to protect against harassment and discrimination.
- Discuss the importance of reporting incidents of harassment and discrimination to appropriate authority.

Classroom Aids:

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

Tools, Equipment and Other Requirements

Nil

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: *10:00*	Duration: *20:00*
Theory – Key Learning Outcomes	**Practical – 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, 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. - Outline the importance of selecting the right financial institution, product, and service - Demonstrate how to carry out offline and online financial transactions, safely	- 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 English11. 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)

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 behaviour 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 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	
10th+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