



# Model Curriculum

## Plumber (General)

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**SECTOR : PLUMBING INDUSTRY**  
**SUB-SECTOR : CONTRACTORS**  
**OCCUPATION : PLUMBING**  
**REFERENCE ID : PSC/Q0104**  
**NSQF LEVEL : 3**



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# PLUMBER (GENERAL)

## CURRICULUM /SYLLABUS

This program is aimed at training candidates for the job of a “Plumber (General)”, in the “Plumbing” Sector/Industry and aims at building the following key competencies amongst the learner

<b>Program Name</b>	<b>Plumber (General)</b>		
<b>Qualification Pack Name &amp; Reference ID.</b>	PSC/Q0104		
<b>Version No.</b>	1.0	<b>Version Update Date</b>	01-12-2015
<b>Pre-requisites to Training</b>	5th Class/Standard pass (To be revised to 10th Class/Standard post 31st December, 2017). In lieu of minimum qualification candidate has worked as an unskilled helper for minimum period of two years in the same role.		
<b>Training Outcomes</b>	<p><b>After completing this programme, participants will be able to:</b></p> <ul style="list-style-type: none"> <li>• Understand pre-installation related activities involving understanding of the task, material preparation, taking measurements and marking the positions.</li> <li>• Install pipes and sanitary fixtures, basic quality check of the installed fittings and fixtures, testing, commissioning and handover activities.</li> <li>• Understanding the installed system, basic inspection and identification of the fault in the system.</li> <li>• Repair like replacement etc. with minimal damage to other systems.</li> <li>• Receive work instructions, discuss task status and receive feedback.</li> <li>• Interact with colleagues within and outside the team.</li> <li>• Communicate and discuss work flow, problems faced, possible solutions and pass on the learning within and outside the team.</li> <li>• Report to senior about process flow improvements that can reduce anticipated or repetitive hazards with regards to: - <ul style="list-style-type: none"> <li>➢ Mishandling of tools and equipment.</li> <li>➢ Electrical or any other problem at the construction site that could result in accident.</li> </ul> </li> <li>• Maintain healthy and safe at secure working environment.</li> <li>• Undertake work independently, be a good team player, be a competent listener for taking instructions.</li> </ul>		

This course encompasses four out of four National Occupational Standards (NOS) of “Plumber (General)” Qualification Pack issued by “SSC: Indian Plumbing Skills Council”.

Sr. No	Module	Theory Duration (hh:mm)	Practical Duration (hh:mm)	Key Learning Outcomes	Corresponding NOS Code	Equipment Required
1	Introduction	2 hrs		About Programmed		<ul style="list-style-type: none"> <li>• Computer,</li> <li>• Projection Equipment,</li> <li>• PowerPoint Presentation and software,</li> <li>• Facilitator's Guide,</li> <li>• Participant's Handbook</li> </ul>
2	Pipes and materials	1 hr	2 hrs	Introduction of HDPE, MDPE, GI PIPES, CPVC, UPVC		<ul style="list-style-type: none"> <li>• GI, HDPE, MDPE,</li> <li>• Heating plate</li> </ul>
3	Cutting	3 hrs	4 hrs	<ul style="list-style-type: none"> <li>• To know the Alignment of pipe</li> <li>• Use of jointing machine</li> <li>• Process of cutting HDPE pipe with cutter</li> </ul>		<ul style="list-style-type: none"> <li>• Pipe Cutter</li> <li>• Pipe jointing and holding machine</li> </ul>
4	Installation	2 hrs	4 hrs	<ul style="list-style-type: none"> <li>• Introduction of basic plumber work</li> <li>• Knowledge of existing plumbing system and site management</li> <li>• Perform operations/procedures on types of pipes</li> <li>• Prepare and Interpret drawings</li> <li>• Understand the role in a team</li> <li>• Understand Installation of water supply systems</li> <li>• Understand Installation of drainage systems</li> <li>• Learn Installation of Plumbing Fixtures and Fittings</li> <li>• Learn use of power tools and machines at site</li> <li>• Knowledge of material storing, stacking and specifications</li> </ul>	(PSC/ N 0101)	Pipes such as cPVC, Copper, SS, PPR, PEX, HDP; fittings such as elbow, coupling, union, reducer, tee, cross, cap, plug, nipple, barb, valves; fixing devices such as screws, plastic plugs, plasterboard fixings, cavity fixing, nails, clips and brackets, bolts and nuts; components of water distribution system such as water mains, ferrule and external stop valve, water meter, internal stop valve, water tank, water pump, main water supply pipes, branch water supply pipes, valves; types of pipe fitting such as threaded pipe, solvent welding, soldering, brazing, compression fitting, flare fitting, flange fitting, mechanical fittings, crimped or pressed

						<p> fittings; tools for cutting pipes such as hacksaws (junior and frame) –blades for different materials; Pipe cutters –for iron, steel, plastics; Files - for different materials; Tap and Dies; Hand tools for cutting building materials – chisels, hammers; Snips for cutting sheet metal pipes; heating/joining machine, compression joints, solder capillary joints, push-fit joints, threaded joints, solvent-welded joints, push-fit joints.</p>
5	Repair	2 hrs	4 hrs	<ul style="list-style-type: none"> <li>• Repairing of various types of fitting and fixtures</li> <li>• Identify the cause/fault</li> <li>• Establish a sequence of repair activities</li> <li>• Decommission</li> <li>• Locate the component to be replaced/repared,</li> <li>• Cut defective structures,</li> <li>• Measure correctly,</li> <li>• Replace</li> <li>• Test Commissioning</li> </ul>	(PSC/ N 0102)	<p>Plunger, pressure gauges, aerators septic systems, roof drain's strainer basket, Allen wrench, shower drain, pipes tube clamp, saws, pipe cutters, sealing compound, dripping faucets, tongue-and-groove plier, water heater</p>
6	Plumbing (Maintenance & Servicing)	2 hrs	4 hrs	<ul style="list-style-type: none"> <li>• It covers diagnose problems and/or failures in plumbing system for the purpose of identifying activities necessary to maintain the system It covers promptly addressing a snag in the plumbing systems</li> </ul>	(PSC/Q0112)	<p>Plunger, pressure gauges, aerators septic systems, roof drain's strainer basket, Allen wrench, shower drain, pipes tube clamp, saws, pipe cutters, sealing compound, dripping faucets, tongue-and-groove plier, water heaters, washing machines, dishwashers, waste containers and logbook</p>

7	Coordination	3 hrs	3 hrs	<ul style="list-style-type: none"> <li>• Communicate with in the team</li> <li>• Communicate outside the team</li> <li>• Plan and prepare</li> <li>• Comprehend Worker manual</li> <li>• Skills in the team members Understand responsibility for work</li> <li>• Working in a team</li> <li>• Report structure and workflow management</li> <li>• Work process communication and reporting of disruptions</li> <li>• Understand the role in Team</li> </ul>	(PSC/ N 0108)	Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook
8	Environment, health and Safety	2 hrs	3 hrs	<ul style="list-style-type: none"> <li>• Composting as an additional income option</li> <li>• Preparing the composting area/pit</li> <li>• Preparing the organic waste</li> <li>• Harvesting the Compost</li> <li>• Modification of waste for value addition</li> <li>• Latest trends in Recycling of waste</li> </ul>	(PSC/ N0109)	Face Protection; Face mask/shield Head protection: Safety Helmet (hard hat), Eye protection (safety glasses with rigid side shields), Safety Shoes/ footwear, Hand protection: hand gloves based on exposure presented, Long pants and shirts with sleeves extending over the shoulders, High visibility vest or other outer most high visibility clothing, Welder's caps, Approved liners, Tight weave cotton, Drawstrings in clothing. Fire extinguishers Type A,B,C&D, ladder, safety harness/rope/belt ,Ear Protection: earplugs/mufflers , Stretcher, First aid kit, Fire Alarm bell etc.
9	Soft Skills	4 hrs	3 hrs	<ul style="list-style-type: none"> <li>• Communicate in English, Hindi and Regional Language</li> </ul>		Computer, Projection Equipment, PowerPoint

						Presentation and software, Facilitator's Guide, Participant's Handbook
10	New line connection	3 hrs	4 hrs	<ul style="list-style-type: none"> <li>• Use of saddle for new connection.</li> <li>• To know the jointing with ferrule.</li> <li>• Use of MTA and FTA</li> <li>• Learn jointing HDPE pipe for new connection</li> <li>• Use of all type of fittings.</li> </ul>		<ul style="list-style-type: none"> <li>• Pipes</li> <li>• Saddle</li> <li>• Ferrule</li> <li>• MTA, FTA Fittings.</li> </ul>
11	Quality standard of water	3 hrs	4 hrs	<ul style="list-style-type: none"> <li>• To know pH level, TDS, Conductivity, fluoride, iron etc.</li> <li>• Inject of chlorine with the help of chlorinator injector</li> <li>• Pressure adjustment in line through sluice valve.</li> </ul>		<ul style="list-style-type: none"> <li>• Sluice valve</li> <li>• Chlorinator injector</li> <li>• pH Meter</li> </ul>
12	Pumps	3 hrs	3 hrs	<ul style="list-style-type: none"> <li>• Use of submersible pump</li> <li>• To operate submersible pump</li> <li>• Learn minor repair and connection of submersible pump</li> </ul>		<ul style="list-style-type: none"> <li>• Submersible Pump and Fittings</li> </ul>
	<b>Total Duration</b>	<b>30 hrs</b>	<b>38 hrs</b>			

Annexure1: Assessment Criteria

<b>Assessment Criteria for Plumber (General)</b>	
<b>Job Role</b>	<b>Plumber (General)</b>
<b>Qualification Pack</b>	<b>PSC/Q0104</b>
<b>Sector Skill Council</b>	<b>Plumbing</b>

<b>Sr. No.</b>	<b>Guidelines for Assessment</b>
1	<b><u>Pre-Assessment Examination</u></b> - Learner shall be required to undertake a pre-assessment examination to determine the minimum qualification of the candidate.
2	<b><u>In-course assessment</u></b> - Learner shall be required to participate in in-class activities.
3	<b><u>Assignments</u></b> - Assignments shall be given in-class and have to be completed and handed over to the instructor for evaluation. Non-submission/Late submission of assignments shall be marked as zero.
4	<b><u>Training/Field Tests</u></b> - Learner shall be required to participate in demonstrations during site visits.
5	<b><u>Practical Training</u></b> - Apprentice training to be done at the site of actual work.
6	<b><u>Post Learning Assessment Examination</u></b> - Learner shall be required to undertake a post-assessment to determine his learning's of concepts, theories, use of tools and equipment, and practical applications of procedures, workflow.
7	<b><u>Passing Qualification Pack</u></b> - Learner should score a minimum of 50% marks in aggregate with a minimum of 40% in each NOS to pass the qualification pack. Learner shall be exempted to reappear in a NOS provided he has scored minimum of 50% marks in a NOS though he has failed to score a minimum 50% marks in aggregate to pass the qualification pack.
8	In case of successfully passing one or more number of NOS(s), the trainee is eligible to take subsequent assessment on the balance NOS(s) to pass the Qualification Pack.





**Annexure2: Trainer Prerequisites for Job role: “Plumber (General)” mapped to Qualification Pack: “PSC/Q0104”**

Sr. No.	Area	Details
1	<b>Job Description</b>	To impart training on Plumber General. The core responsibility includes enhancement of knowledge, refining of understanding and improvement in performance of the trainees. Train the plumbers for installation and repair of basic plumbing systems including those of advanced sanitary fixtures as per manufacturer’s specifications in housing, commercial and institutional setups.
2	<b>Personal Attributes</b>	A Plumber Trainer should be free from socio-economic preferences and prejudice. He/ she should be well aware of new trends, products and techniques in the market. Besides being knowledgeable, he/ she should be energetic, motivating, innovative and good at communication. The trainer should be able to establish rapport with the trainees and employ innovative methods to impart instructions.
3	<b>Minimum Educational Qualifications</b>	Passed 10 <sup>th</sup> Class or Standard of Central or State Board of Education or equivalent as notified by Ministry of Human Resource Development, Govt. of India.
4a	<b>Domain Certification</b>	“IPSC Certification in Plumber (General) NSQF level 4 or equivalent QP with a minimum score of 70 percent” OR “ITI Certificate in plumbing trade with IPSC Certification in Plumber (General) NSQF Level 4 or equivalent QP with a minimum score of 70 percent” OR “Diploma or Degree in Civil or Mechanical Engineering from a recognised institute or university or equivalent qualification as notified by Ministry of Human Resources, Govt. of India with an IPSC Certification in Plumber (General) NSQF Level 4 or equivalent QP with a minimum score of 70 percent”
4b	<b>Platform Certification</b>	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack approved by NSDC/NSDA with a minimum accepted score of 60 percent in aggregate.
5	<b>Experience</b>	IPSC Certificate - 3 years. ITI in plumbing trade - 4 years. Diploma or Degree holders or equivalent in engineering - NIL.

