PLUMBING COURSE – PCP & PRACTICAL TRAINING SCHEDULE

	Schedule		Theory		Practical		Instruction to instructor	Learning outcome
Week	**Lesson**	**Day**	**Duration (Hr)**	**PCP- Topic**	**Duration (Hr)**	**Practical Training Topic**		
Week 1	**Unit & measurement**	**DAY 1**	**2 hrs**	• **Introduction to Plumbing trade** • **Role of Plumber & its activities.** • **Introduction to Plumbing systems** • **Introduction to Plumbing systems**	**4hrs**	• **Survey with learners any finished building to find out the various Plumbing fixtures & layout systems.**	• **Arrange and plan the visit to a finished building.**	• **Learner will be able to know about Plumbing system.**
	Unit & measurement	**DAY 2**	**2 hrs**	• **Unit & Measurements** • **Basics symbol of Plumbing Drawing.** • **Classification of material required for internal and external plumbing work**	**4 hrs**	• **Measurement of length, angle, internal and external diameter of a pipe section and fittings.** • **Preparation of sample & weighing (a) cement sand dry mixture for plastering, and (b) cement, sand and coarse aggregate dry mixture for concrete construction.** •	• **Demonstration of using plumb bob and spirit level.** • **Demonstration & Execution of working Plumbing drawing.** • **Use charts/ppt or video.**	•

Week 2	**Tools for plumbing**	**DAY 1**	**2hrs**	• **Introduction to tools used in Plumbing** • **Major classification of tools** • **Handling & use of each tools**	**4 hrs**	**Use of different types of plumbing tools & safety equipment for any fitting-:** • **Use of chisel for groov cutting.** • **Use of steel rule try square scriber and divider for making one from drawing.** • **Use of hacksaw, centre punch, marking, filling, drilling holes and sawing.** • **Different types of files and filing to lines.**	• **Demonstrate working of all the tools as specified in practical** • **Use charts/ppt or video**	•
	Tools for Plumbing	**DAY 2**	**2 hrs**	• **Safety measures while using tools.** • **Tool maintenance.**	**4 hrs**	• **Use of safety equipment, helmet, and hand gloves, boots, jackets, eye glasses, safety, belts & chains for height work.**	• **Show specimen of all the safety equipment.** • **Demonstrate the safety measures**	•

						• **Practice the maintenance of the tool**		
Week 3	**Pipes & fittings**	**DAY 1**	**2hrs**	• **Introduction to different type of pipes and their use.** • **Basic and modern fittings.**	**4 hrs**	**Handling and fitting of pipes of all types and determining the following:** • **Maximum length of pipe available in the market.** • **List of possible diameters of pipes available in the market.** **The candidates should perform following:** • **Cutting ,threading & jointing of M.S. steel and plastic pipes,** • **Using dyes, blades, lathe, etc.** • **Trouble shooting**	• **Arrange visit to nearby Plumbing material market** • **Demonstrate Cutting, threading & jointing of pipes as mentioned in practical.** • **Assign a trouble shooting case study .** • **Use charts/ppts or video for giving knowledge on pipes.**	•

	Pipes & fittings	**DAY 2**	**2 hrs**	• **Introduction to different types of fittings and their applications.**		**The candidates should perform following:** • **Using fittings in pipes.** • **Laying of layout for a small water supply**.	• **Demonstrate fittings used in Plumbing systems.** • **Give assignment for layout of a small water supply.** • **Use charts/ppts or video for giving knowledge on joints.**	•
Week 4	**Joints used in pipes**	**DAY 1**	**2 hrs**	• **Types of pipe joints and its importance.**	**4 hrs**	• **Safety precaution involve in making various types of joints.** • **Handling of tools for making joints**	• **Show the sample/ model of each type of joint.** • **Demonstrate the procedure for making each type of joint and**	•
	Joints used in pipes	**DAY 2**	**2 hrs**	• **Procedure of making various types of joints (suitability).**	**4 hrs**	**The following experiments need to be done :**	• **Arrange a group activity for preparing**	•

						• Making expansion joints • Making collar joints • Making flange joints • Making flexible joints • Making joints for A.C. • Making Victaulic joints (Gasket joint) • Joining of P.V.C. pipes to C.I. pipes • Joining of R.C.C. pipes	different joints • Demonstrate Joining of R.C.C. pipes.	
Week 5	Cutting & threading of pipes	Day 1	2 hrs	• Need for a threaded/ screwed joint. • Introduction to tools used in cutting, threading.	4hrs	• Practice the jointing after cutting and threading. • Checking of leakage / blockage in pipes using foot pumps or other pumps • Concealment of vertical pipes	• Demonstrate the procedure of jointing after cutting and threading.	•
	Cutting & threading of	Day 2	2hrs	• Precaution to be followed during	4hrs	• Handling of tools used in	• Make	•

	pipes			**cutting and threading** • **Procedure and process to be followed while cutting and threading**		**cutting and threading.**	**arrangements for performing the cutting and threading activity.**	
Week 6	**Water traps**	**Day 1**	**2 hrs**	• **Basic function of traps and need of good traps** • **Safety measures taken during installation of traps**.	**4hrs**	**Introduction to various types of traps & water sealing:** .	**Arrange for -:** **P, Q, & S taps, gully, traps, floor trap, grease trap, master trap**	
	Water traps	**Day 2**	**2hrs**	• **Procedure for Installation of traps**	**4hrs**	**re-assembling / assembling of water traps**	**Demonstrate re-assembling / assembling of water traps**	
Week 7	**Masonry work**	**Day 1**	**2 hrs**	• **Introduction to tools and material used for the masonry work**. • **Method of preparation of mortar, mixing & placing of concrete.**	**4hrs**	• **Identification by observation of the range of tools used in masonry work.** • **Preparation of mortar, mixing & placing of concrete.** • **Chiseling of groove in walls and concealment of pipes and fixing of brackets.**	• **Arrange for all types of tools used in masonry work.** • **Demonstration of grade of concrete and mortar** • **Demonstrate Chiseling of groove in walls and concealment of pipes and fixing of**	•

							brackets.	
	Masonry work	**Day 2**	**2hrs**	• **Method to fix the plumbing and sanitary appliances.**	**4hrs**	• **Fixing of sanitary appliances**	• **Practice fixing of sanitary appliances in masonry, concrete e.t.c.**	•
Week 8	**Plumbing Operation (Special)**	**Day 1**	**2 hrs**	• **Introduction to installing of non-return valve, water meter, water pipeline e.t.c.** • **Introduction to various connections of Plumbing systems.**	**5hrs**	• **ferrule & connection with stop cock and water meter.** • **Installation and reading of water meter**	**Demonstrate -:** • **Use of ferrule & connection with stop cock and water meter.** • **Installation and reading of water meter with measurements.**	
	Plumbing Operation (Special)	**Day 2**	**2hrs**	• **Various connections, e.g. Main water line to house service line with necessary fittings.**	**5hrs**	• **Connections, e.g. Main water line to house service line with necessary fittings.**	• **Assign the task of making models describing the overhead water tank connections and underground water tank**	•

							connections, coming from main supply line.	
Week 9	**Hand Pumps & Water booster**	**Day 1**	**2 hrs**	• **Basic structure of hand pump.** • **Introduction to the type, working and method of installation of the hand-pumps.**	**4hrs**	• **Identification by observation of hand pumps and its salient features (Assembling & de-assembling).** • **boring process**	• **Demonstrate Assembling & de-assembling of hand pumps.** • **Identification of the steps of boring process by observation of video films / clippings of you-tube of borings & installation or site visit.**	•
	Hand Pumps & Water booster	**Day 2**	**2hrs**	• **Introduction to the need of water booster, type and function and maintenance of water-boosting pumps**	**4hrs**	• **Installation of booster pump** • **Identification of precautions & troubleshooting of all type of pumps by observing video clips or model.**	• **Installation of booster pump of any one type. Other booster pumps may be demonstrated using video / you-tube shows.** • **Assign a real trouble**	•

							shooting task.	
Week 10	**Sanitary fitting**	**Day 1**	**2 hrs**	• **Introduction to different types of sanitary ware available in market.**	**6hrs**	• **Installation of wash basin/sink/bathtub by models.**	• **Demonstrate the Installation of wash basin/sink/bathtub by models.**	•
	Sanitary fitting	**Day 2**	**2hrs**	• **Application of various types of sanitary fittings.**	**6hrs**	• **Installation of water closet/urinal by models.**	• **Demonstrate the Installation of water closet/urinal by models.**	•
WEEK 11	**Sanitary fitting**	**Day 1**	**2 hrs**	• **Sketches of sanitary fittings (Identify, draw and interpret).**	**6hrs**	• **Installation of Geyser**	• **Demonstrate the Installation of Geyser** • **Use charts/ppt or videos for showing sketches of sanitary fittings.**	•
	Sanitary fitting	**Day 2**	**2hrs**	• **Ablution and soil fitting.**	**6hrs**	• **Layouts of horizontal & vertical pipes on walls (marking).** • **Installation of**	• **Demonstrate and assign the task of Layouts of horizontal & vertical**	•

						Rosette/coral/ tap/shower.	**pipes on walls (marking).** • **Demonstrate and practice Installation of Rosette/coral/tap/shower**	
Week 12	**Kitchen fittings**	**Day 1**	**1 hrs**	• **Introduction to fit different components of kitchen on suitable position.** • **Plan the position of kitchen with respect to ventilation and lighting.**	**4hrs**	• **Procedure for fixing sinks, water taps, bottle traps, angle valve e.t.c. e.t.c.**	• **Demonstrate Procedure for fixing sinks, water taps, bottle traps, angle valve e.t.c.** • **Assign the group activity for fixing any one of the above.**	•
	Kitchen fittings	**Day 2**	**1hrs**	• **Providing water supply line in a kitchen.**	**4hrs**	• **To understand Installation and fitting of water purifier of different procedures.**	• **Demonstrate Procedure for Installation and fitting of water purifier of**	•
Week 13	**Kitchen fittings**	**Day 1**	**1 hrs**	• **Providing waste water disposal line in a kitchen.**	**4hrs**	• **To understand the model of a kitchen water supply & drainage fittings.**	• **By using video /charts or ppts show a complete kitchen model**	•

	Kitchen fittings	**Day 2**	**1hrs**	• **To determine proper slope of the floor and pipes for self disposal of water.**	**4hrs**	• **Determine slope for self disposal of water by using spirit level.**	• **Provide spirit level to determine slope for self disposal of water by and record the observation.**	•
Week 14	**Disposal of water**	**Day 1**	**1hrs**	• **Proper layout of disposal pipeline system and there drawings.**	**4hrs**	• **Fixing of vertical drain pipe for disposal of water.**	• **Demonstrate Fixing of vertical drain pipe for disposal of water by using models or videos.**	•
	Disposal of water	**Day 2**	**1hrs**	• **Connection of rain water pipe and its proper position.**	**4hrs**	• **Fittings used in rain water disposal**	• **Use video or ppts for rain water harvesting system.** • **Specify the proper connection and position of rain water pipe**	•
Week 15	**Disposal of water**	**Day 1**	**1hrs**	• **Preventing seepage from building to ground below.**	**4hrs**	• **Site visit for any rain water harvesting site**	• **Arrange for the site visit in advance.**	•
	Disposal of water	**Day 2**	**1hrs**	• **Selecting appropriate pipe size for removal of proper quantity of water.**	**4hrs**	• **To measure discharge of different pipe sections.**	• **Assist in measuring the discharge of**	•

							different pipe sections.	
Week 16	**Operational planning & maintenance**	**Day 1**	**2 hrs**	• **How to detect faults in water supply line.**	**4hrs**	• **Trouble shooting of leakage of water/gas on a working model.**	• **Demonstrate Trouble shooting of leakage.** • **Assign a activity for practicing Trouble shooting.**	•
	Operational planning & maintenance	**Day 2**	**2hrs**	• **Introduction to fixture used in drain.**	**4hrs**	• **Repairing of water closet and drainage system**	• **Demonstrate fixtures by using videos, ppts.** • **Arrange a group activity related to Repairing of water closet and drainage system.**	•
Week 17	**Operational planning & maintenance**	**Day 1**	**2 hrs**	• **To diagnose repair a burst or leakage of pipe e.t.c.**	**4hrs**	• **Repairing and Maintenance of waste water pipes.**	• **Demonstrate a trouble shooting problem on burst or leakage of pipe**	•
	Operational	**Day 2**	**2hrs**	• **Importance of**	**4hrs**	• **Identification**	• **Demonstrat**	•

	planning & maintenance			**cleanliness insanitary installations**		**of the steps of periodic cleaning of sanitary installations including pipes.**	**e periodic cleaning of sanitary installations including pipes with the help of video clippings.**	
Week 18	**Safety precautions**	**Day 1**	**1hrs**	• **Importance of safety precautions and first aid at work place.** • **Role of an individual in a team for safety precautions and first aid.** • **Signage and barricade requirements at site.** • **Importance of clearance of all work area.**	**4hrs**	• **Identification of different types of safety gadgets by observation.**	• **Practicing the mock drills for safety of self and co-workers.** • **Practicing the use of proper sign boards and barricade system**	•
	Safety precautions	**Day 2**	**1 hrs**	• **Environmental requirements for dealing with waste obtained in Plumbing operations.** • **First aid procedures associated with Plumbing Operations.** • **Different types of safety controls in Plumbing systems.**	**4hrs**	• **Practice disposal, reuse, recycling of materials used in Plumbing job.** • **first aid treatment in exigency, use different first aid materials for trauma injuries &**	• **Practice evacuation Plans and procedures during accidents.** • **Perform first aid treatment in exigency (using dummy situations).** • **Demonstrate using videos**	•

				• Hazards at the work site.		general bleeding, bone fractures e.t.c • Learning the prevention of spreading of air-borne and water borne diseases at work site. • Learning of safety norms & colors	recycling of materials used in Plumbing job. • Demonstrate using videos safety norms & colors.	
Week 19	**Professional ethics and practices**	**Day 1**	**2 hrs**	• Professional ethics in Plumbing. • Personal integrity, commitment, punctuality. • Quality and quantity of work. • Good behavior with seniors colleges & clients use of correct and standard fixtures. • Proper use of equipment and materials.	**4hrs**	• Practice Personal integrity, commitment, punctuality. • Study on 'Professional Ethics'	• Practice these aspects while taking example of any one relevant company's policies. • Using a case study on 'Professional Ethics' perform group discussion to sort out an unknown problem in the site. • Use videos/PPTs for Demonstrating	•

							equipment and materials.	
	Communication within & outside team	**Day 2**	**2hrs**	• **Importance of teamwork in Plumbing.** • **Methods of communication and interaction with colleagues**	**2hrs**	• **Execution of task in a team.**	• **Practice Methods of communication and interactions (oral, written & body language) by organizing a group discussion.**	•
Week 20	**Decision making ability**	**Day 1**	**2 hrs**	• **Planning and preparation activities for Plumbing work.**	**2 hrs**	• **Site work for planning & preparation.**	• **Group discussion for a site work for planning & preparation .**	•
	Reporting communication & management	**Day 2**	**2 hrs**	• **Reporting structure.** • **Role of an employee/worker in a team.** • **Range of terms and concepts used in management.**	**2 hrs**	• **Project report for planning & execution of work..**	• **Prepare a team of worker for different role for a common project and submit project report for planning & execution of work..**	•

Week 21	**Entrepreneurship**	**Day 1**	**2 hrs**	• **Concept and importance of entrepreneurship.** • **Explain the need and scope of self employment.** • **The sources of assistance for self employment.** • **Knowledge of entrepreneurship act.**	**2 hrs**	• **'Entrepreneurship project report**	• **Prepare a detailed project report on 'Entrepreneurship' to submit in the bank as needed to apply to become an entrepreneur**	•
	Quality Assurance in work site procedures and practices	**Day 2**	**2 hrs**	• **Significance of worksite procedures and practices.** • **Guidelines for quality in work, control of wastage and damage.** • **Steps of workflow.** • **About handover/takeover of site & equipment and work area.** • **Explain various work practices for plumber.**	**2 hrs**	• **Guidelines for quality in work, control of wastage and damage** • **& Steps of workflow.**	• **Prepare a maintenance manual by taking a situation for work site.**	•