

Unit of Competency	Learning Outcomes	Learning Contents	Practical Activities	Methodologies	Assessment Methods	Nominal Duration
		maintenance <ul style="list-style-type: none"> <li>- Methods and techniques</li> <li>- Procedures</li> </ul>				2 hours
	4.3 Store tools and equipment	<ul style="list-style-type: none"> <li>• Safety practices               <ul style="list-style-type: none"> <li>- use of PPE</li> <li>- handling of tools and equipment</li> <li>- good housekeeping</li> <li>- Storing procedures and techniques</li> <li>- Storage conditions/ locations</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Storing tools and equipment</li> <li>• Handling of tools and equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstration</li> <li>• Group discussion</li> <li>• Practical <i>Lab</i></li> </ul>	<ul style="list-style-type: none"> <li>• Practical exam</li> <li>• Direct observation</li> <li>• Written test</li> </ul>	

## CORE COMPETENCIES

Unit of Competency	Learning Outcomes	Learning Contents	Practical Activities	Methodologies	Assessment Methods	Nominal Duration
1. Prepare estimation of materials for multiple plumbing units	1.1 Study approved plumbing plan	<ul style="list-style-type: none"> <li>• Arithmetic               <ul style="list-style-type: none"> <li>- Linear measurement</li> <li>- Dimension</li> <li>- Unit conversion</li> </ul> </li> <li>• Blue-print reading               <ul style="list-style-type: none"> <li>- Electrical, mechanical plan, symbols and abbreviations</li> </ul> </li> <li>• Trade theory               <ul style="list-style-type: none"> <li>- Basic technical plan</li> <li>- Various types of drawings</li> <li>- Notes and</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Interpreting technical plans</li> <li>• Relaying messages and information (written and verbal)</li> <li>• Applying Calculation techniques</li> </ul>	<ul style="list-style-type: none"> <li>• Group discussion</li> <li>• Actual demonstration</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Written and Oral Examination</li> </ul>	16 hours

Unit of Competency	Learning Outcomes	Learning Contents	Practical Activities	Methodologies	Assessment Methods	Nominal Duration
		specifications <ul style="list-style-type: none"> <li>• Environmental conservation procedures, e.g. 3R (reduce, reuse, recycle)</li> <li>• DOLE Department Order No. 13 s. 1998 Guidelines Governing Occupational Safety and Health in the Construction Industry.</li> </ul>				20 hours
	1.2 Select materials and tools	<ul style="list-style-type: none"> <li>• Arithmetic               <ul style="list-style-type: none"> <li>- Linear measurement</li> <li>- Dimension</li> <li>- Unit conversion</li> </ul> </li> <li>• Blue-print reading               <ul style="list-style-type: none"> <li>- Electrical, mechanical plan, symbols and abbreviations</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Interpreting technical plan</li> <li>• Relaying messages and information (written and verbal)</li> </ul>	<ul style="list-style-type: none"> <li>• Group discussion</li> <li>• Demonstration</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Written and Oral Examination</li> </ul>	20 hours
	1.3 Finalize materials take-off	<ul style="list-style-type: none"> <li>• Trade theory               <ul style="list-style-type: none"> <li>- Basic technical plan</li> <li>- Various types of drawings</li> <li>- Notes and specifications</li> </ul> </li> <li>• 5S</li> <li>• Environmental-conservation procedures, e.g. 3R (reduce, reuse, recycle)</li> <li>• DOLE Department Order No. 13 s. 1998</li> </ul>	<ul style="list-style-type: none"> <li>• Applying estimation techniques</li> <li>• Applying calculation and computation</li> </ul>	<ul style="list-style-type: none"> <li>• Group discussion</li> <li>• Demonstration</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Written and Oral Examination</li> </ul>	

Unit of Competency	Learning Outcomes	Learning Contents	Practical Activities	Methodologies	Assessment Methods	Nominal Duration
		Guidelines Governing Occupational Safety and Health in the Construction Industry				
2. Perform multiple plumbing units installation and assemblies	2.1 Prepare materials for drainage, sanitary, vent and waterline layout works	<ul style="list-style-type: none"> <li>• Blue print reading</li> <li>• Materials specification</li> <li>• 5S</li> <li>• Use of plumbing materials, tools and equipment</li> <li>• Environmental-conservation procedures, e.g. 3R (reduce, reuse, recycle)</li> </ul>	<ul style="list-style-type: none"> <li>• Interpreting plan and details</li> <li>• Selecting and preparing appropriate materials, tools and equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Discussion</li> <li>• Demonstration</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Written and Oral Examination</li> <li>• Demonstration</li> </ul>	8 hours
	2.2 Install pipes and fittings for drainage, sanitary, vent and waterline layout	<ul style="list-style-type: none"> <li>• Mensuration</li> <li>• Blue print reading</li> <li>• Materials specification</li> <li>• 5S</li> <li>• Use of plumbing materials, tools and equipment</li> <li>• Environmental-conservation procedures, e.g. 3R (reduce, reuse, recycle)</li> <li>• DOLE Department Order No. 13 s. 1998 Guidelines Governing Occupational Safety and Health in the Construction Industry</li> </ul>	<ul style="list-style-type: none"> <li>• Interpreting plans and details</li> <li>• Handling of materials, tools and equipment</li> <li>• Communication (written and verbal)</li> <li>• Applying methods and techniques in various type of pipe connections</li> <li>• Cutting and threading pipes</li> <li>• Applying markings</li> <li>• Applying measurement and mathematical computation</li> </ul>	<ul style="list-style-type: none"> <li>• Discussion</li> <li>• Demonstration</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Written and Oral Examination</li> <li>• Demonstration</li> </ul>	12 hours

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	2.3 Install cold water system and multipoint water heater for hot water supply lines	<ul style="list-style-type: none"> <li>• Mensuration</li> <li>• Blue print reading</li> <li>• Materials specification</li> <li>• 5S</li> <li>• Use of plumbing materials, tools and equipment</li> <li>• Environmental-conservation procedures, e.g. 3R (reduce, reuse, recycle)</li> <li>• DOLE Department Order No.13 s. 1998 Guidelines Governing Occupational Safety and Health in the Construction Industry</li> </ul>	<ul style="list-style-type: none"> <li>• Interpreting plans and details</li> <li>• Handling of materials, tools and equipment</li> <li>• Communication (written and Verbal)</li> <li>• Applying methods and techniques in various type of pipe connections</li> <li>• Cutting and threading pipes</li> <li>• Applying markings</li> <li>• Applying measurement and mathematical computation</li> </ul>	<ul style="list-style-type: none"> <li>• Discussion</li> <li>• Demonstration</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Written and Oral Examination</li> <li>• Demonstration</li> </ul>	12 hours
	2.4 Install building drains, sewer and ventilation	<ul style="list-style-type: none"> <li>• Mensuration</li> <li>• Blue print reading</li> <li>• 5S</li> <li>• Use of plumbing materials, tools and equipment</li> <li>• Environmental-conservation procedures, e.g. 3R (reduce, reuse, recycle)</li> <li>• DOLE Department Order No. 13 s. 1998 Guidelines Governing Occupational Safety and Health in the</li> </ul>	<ul style="list-style-type: none"> <li>• Interpreting plans and details</li> <li>• Handling of materials, tools and equipment</li> <li>• Communication (written and verbal)</li> <li>• Applying methods and techniques in various type of pipe connections</li> <li>• Applying markings</li> </ul>	<ul style="list-style-type: none"> <li>• Discussion</li> <li>• Demonstration</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Written and Oral Examination</li> <li>• Demonstration</li> </ul>	12 hours

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		Construction Industry				12 hours
	2.5 Mount and layout plumbing fixtures and accessories	<ul style="list-style-type: none"> <li>• Mensuration</li> <li>• Blue print reading</li> <li>• 5S</li> <li>• Use of plumbing materials, tools and equipment</li> <li>• Environmental-conservation procedures, e.g. 3R (reduce, reuse, recycle)</li> <li>• DOLE Department Order No. 13 s. 1998 Guidelines Governing Occupational Safety and Health in the Construction Industry</li> </ul>	<ul style="list-style-type: none"> <li>• Interpreting plans and details</li> <li>• Handling of materials, tools and equipment</li> <li>• Communication (written and verbal)</li> <li>• Applying methods and techniques in various type of plumbing fixtures</li> </ul>	<ul style="list-style-type: none"> <li>• Discussion</li> <li>• Demonstration</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Written and Oral Examination</li> <li>• Demonstration</li> </ul>	
3. Conduct pipe leak testing	3.1 Prepare for conducting pipe leak testing	<ul style="list-style-type: none"> <li>• Mensuration</li> <li>• Blue print reading</li> <li>• 5S</li> <li>• Use of plumbing materials, tools and equipment</li> <li>• Environmental-conservation procedures, e.g. 3R (reduce, reuse, recycle)</li> <li>• DOLE Department Order No. 13 s. 1998 Guidelines Governing Occupational Safety and Health in the</li> </ul>	<ul style="list-style-type: none"> <li>• Interpreting plan and details</li> <li>• Handling of materials, tools and equipment</li> <li>• Communication (written and verbal)</li> <li>• Applying methods and techniques in pipe leak testing</li> </ul>	<ul style="list-style-type: none"> <li>• Discussion</li> <li>• Demonstration</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Written and Oral Examination</li> <li>• Demonstration</li> </ul>	12 hours

Unit of Competency	Learning Outcomes	Learning Contents	Practical Activities	Methodologies	Assessment Methods	Nominal Duration
		Construction Industry				12 hours
	3.2 Perform pipe leak testing	<ul style="list-style-type: none"> <li>• Blue print reading</li> <li>• 5S</li> <li>• Use of plumbing materials, tools and equipment</li> <li>• Environmental-conservation procedures, e.g. 3R (reduce, reuse, recycle)</li> <li>• DOLE Department Order No. 13 s. 1998 Guidelines Governing Occupational Safety and Health in the Construction Industry</li> </ul>	<ul style="list-style-type: none"> <li>• Interpreting plan and details</li> <li>• Handling of materials, tools and equipment</li> <li>• Communication (written and verbal)</li> <li>• Applying methods and techniques in pipe leak testing</li> </ul>	<ul style="list-style-type: none"> <li>• Discussion</li> <li>• Demonstration</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Written and Oral Examination</li> <li>• Demonstration</li> </ul>	
4. Perform plumbing repair and maintenance works	4.1 Repair defective pipes, fittings and plumbing fixtures	<ul style="list-style-type: none"> <li>• Mensuration</li> <li>• Blue print reading</li> <li>• 5S</li> <li>• Use of materials, consumables, tools and equipment</li> <li>• Plumbing fixtures</li> <li>• Environmental-conservation procedures, e.g. 3R (reduce, reuse, recycle)</li> <li>• DOLE Department Order No. 13 s. 1998 Guidelines Governing Occupational Safety and Health in the</li> </ul>	<ul style="list-style-type: none"> <li>• Interpreting plans and details</li> <li>• Replacing broken/defective pipes</li> <li>• Clearing clogged pipes and drainage</li> <li>• Handling of materials, tools and equipment</li> <li>• Communication (written and verbal)</li> <li>• Applying methods and techniques in repairing defective pipes, fittings and plumbing fixtures</li> </ul>	<ul style="list-style-type: none"> <li>• Discussion</li> <li>• Demonstration</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Written and Oral Examination</li> <li>• Demonstration</li> </ul>	12 hours

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		Construction Industry				12 hours
	4.2 Clear clogged pipe and drains	<ul style="list-style-type: none"> <li>• Mensuration</li> <li>• Blue print reading</li> <li>• 5S</li> <li>• Use of tools and equipment</li> <li>• Environmental-conservation procedures, e.g. 3R (reduce, reuse, recycle)</li> <li>• DOLE Department Order No. 13 s. 1998 Guidelines Governing Occupational Safety and Health in the Construction Industry</li> </ul>	<ul style="list-style-type: none"> <li>• Interpreting plan and details</li> <li>• Handling of tools and equipment</li> <li>• Clearing clogged pipes and drains</li> </ul>	<ul style="list-style-type: none"> <li>• Discussion</li> <li>• Demonstration</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Written and Oral Examination</li> <li>• Demonstration</li> </ul>	